

Economic Analysis of the Southwestern Commission Region

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Prepared for:

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Economic Development Commission**



in partnership with



Contents

Introduction	3
Summary of Findings.....	4
Economy Overview.....	7
Industry Clustering.....	16
Supply Chains/Gaps	21
Worker Occupations & Skills/Knowledge.....	25
Individual Business Records.....	37
Examination of Similar Economic Development Districts	44
Optimal Industry Targets.....	56
Recommendations.....	68
Addendum.....	70
Firm Profiles.....	71

Introduction

The Economic Analysis of the Southwestern Commission Region (SWC) is an objective, entirely data-based analysis of the seven-county Southwestern Commission western North Carolina region. Findings from the analysis are presented for use in economic development program support and direction. The results provide grounded and impartial information which can be incorporated confidently into economic development strategic decision making.

The analysis is limited in that it does not include an assessment of location-specific factors such as site availability, infrastructure or taxes. Due to the geographic diversity of the region it is advisable that incorporation of material on the “last-mile” be in the hands of local economic development personnel, who have superior knowledge of their own individual communities.

Summary of Findings

- The SWC economy is currently experiencing accelerating growth, after enduring recessionary losses of nearly 7,000 jobs. The current rate of employment growth is 2.2 percent, the highest pace since 2006. The area has added 2,614 net new jobs in the last four years.
- Employment growth, while positive, has been highly polarized. Of eighteen major industry sectors, eleven have added workers since 2010. However, just two have contributed 65 percent of the total employment gains; *Arts, Entertainment & Recreation* and *Accommodation & Food Services*. Conversely, 69 percent of recent losses have come from only two industries; *Health Care* and *Construction*.
- The imbalance in industry growth has likely exacerbated the region's lower wage standing. As of 2015 the SWC's average weekly wage stood at \$633, which is 35 percent below the nation and 27 percent below the state. After adjusting for inflation, SWC's average weekly wage lost \$6 or -0.9 percent over the last five years. Examined through the lens of specific industry wages; 95 percent of net new employment has come from low wage sectors. While 88 percent of employment losses occurred in high wage industries.
- The SWC economy supports nineteen industry clusters. The two largest are *Health Services* and *Education*; employing 8,491 and 6,196 respectively. The most locally specialized industry cluster is *Forest & Wood Products* with over twice the employment concentration than in the nation. The *Plastics & Chemicals* cluster stands out due to its high relative wages, recent growth and high degree of specialization.
- As might be expected, the SWC is highly reliant on outside industries to satisfy local industry demands. It is estimated that 77 percent of the SWC's total industry requirements must be imported into the area.

- The economic development field is increasingly recognizing that understanding a *local workforce* is critical to understanding the true embedded capacity and potential of a local economy. SWC's workers can be organized into 22 occupational groups. The SWC experienced growth in 17 of 22 occupational groups over the recent 2010 to 2015 period. The *Food Preparation & Serving* occupational group is the largest in the SWC of those that have experienced both growth and exhibit a high degree of specialization. When median hourly earnings of each occupational group are considered, it is clear that growth has been led by low earnings occupations; low earnings occupations saw a net gain of 2,114 jobs while high earning occupations experienced a net gain of 71 jobs.
- Worker skills & knowledge consistently rank at or near the top of factors important to businesses expansion or location decisions. An examination of 22 worker skill-sets shows that SWC's workforce is strong in eight skills. Six of the eight are in the *Technical Skills* group. Among individual skills, *Operation and Control* has the highest index score at 1.2, meaning the local proportion of workers highly skilled in *Operation and Control* is roughly 20 percent greater in the SWC than in the nation. In the SWC's workforce there are 11,019 workers highly skilled in *Operation and Control*. Examining worker knowledge reveals that the SWC's workforce is strong in 16 areas of knowledge. Four of these locally strong areas of workforce knowledge are within the *Education & Training* group and another three are in *Mathematics & Science*. This likely reflects the influence of Western Carolina University.
- An analysis of individual business records provides insights into the SWC economy not possible with traditional government databases. Of the 8,298 business records in 2015, 5,433 were also in the 2010 database; meaning 69 percent of SWC's businesses are five or more years old. Business size is strongly related to survivorship. While all businesses with 250 or more employees survived over the last five years, only sixty percent of with those with one to four employees have existed over the same period. Businesses in the range of 1-4 employees comprised the majority of new records in the SWC. Of the 3,414 new businesses since 2010, 2,624 or 77 percent are in the 1-4 employment range.

- Over the last five years two sectors stand out for their differing contributions. *Health Care* accounts for 17.4 percent of current business records, 11.2 percent of all records closed or moved, yet still contributed 22.7 percent of all new records. The activity indicates a surge of new business formation in the *Health Care* industry. On the other hand, *Retail Trade* accounts for 18.9 percent of current business records, 21.5 percent of all records closed or moved, and only 15.5 percent of all new records. The activity indicates a lower relative pace of new business formation in the *Retail Trade* industry.
- A comparison of individual business records between the SWC and nationwide reveals businesses in the 1-4 employment range comprise a greater proportion in the SWC. Although the difference is only 3.3 percentage points greater, it is the only range with a larger relative proportion.
- An examination of similar Economic Development Districts revealed that even when compared to other similar districts, the SWC has low wages; about 13 percent below the average of the thirteen selected districts. The SWC has higher relative employment concentration in two lower-paying industries; *Leisure & Hospitality* and *Retail*. The SWC also has some of the lowest comparable measures of industry specialization in *Information* and *Manufacturing*.
- Finally, the analysis identified fifteen optimal industry targets; building upon a number of quantifiable screens such as presence, integration and opportunity. The targets fall within three broad categories; *advanced services*, *manufacturing opportunities* and *forest & wood products cluster support*.

Economy Overview

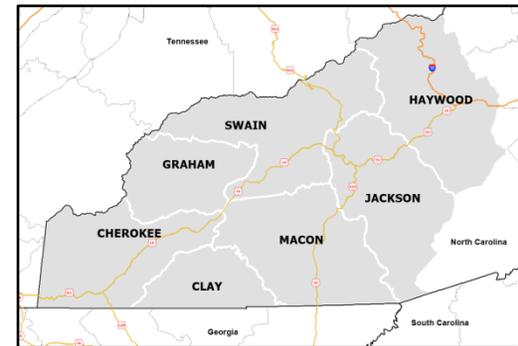
The Southwestern Commission (SWC) consists of seven counties at the western tip of North Carolina. As of 2015 the total population equaled 196,265, an increase of 2,145 or 1.1 percent over the last five years (Table 1). Relative to the nation and state the SWC population has grown slower over the recent five year period; an average growth annual rate of 0.2 percent compared to 0.8 percent and 1.0 percent respectively.

Among those aged 16 and over in the SWC, 47.8 percent are in the labor force; about 11 percentage points below the nation and state. Over the last 12 months, unemployment rates in the SWC have averaged 6.2 percent; one percentage point above the nation and one-half percentage point above the state.

Workers in the SWC are more likely to be self-employed; at 8.4 percent of all workers, the proportion is roughly 2.5 percentage points greater than in the nation and state.

Of all households in the SWC, 66.8 percent have earnings, 10 percentage points below the nation and state. Conversely, SWC households are more likely to have Social Security and retirement income.

Employment in the seven-county SWC totaled 62,864 as of the third quarter of 2015. Employment peaked in 2007 at 67,197, and then fell to a post-recession¹ low of 60,250 in 2011; a loss of 6,947 jobs or -10.3 percent (Figure 2). Since 2011 the SWC has added 2,614 net new jobs. The current rate of employment growth is 2.2 percent, the highest pace since 2006 (Figure 3). Over the last five years the growth rate has varied, all years below the national rate and all but 2015 also below the state.



¹ The recent recession is dated as beginning in December 2007 and ending in June 2009.

Table 1
Overview Comparison

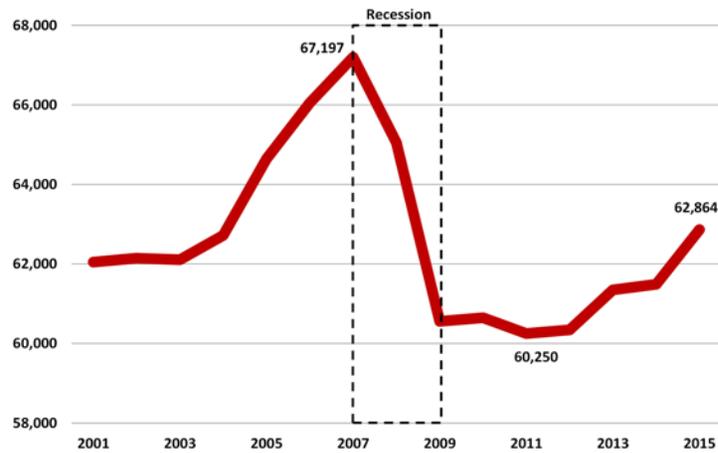
	SWC			
	Nation	North Carolina	%	#
Total Population Change (2010-2015)	3.9%	5.1%	1.1%	2,145
Average Annual Population Change (2010-2015)	0.8%	1.0%	0.2%	429
Labor force participation (age 16+) (2014 5Y estimate)				
In labor force	63.9%	63.2%	52.2%	84,435
Not in labor force	36.1%	36.8%	47.8%	77,294
Unemployment Rate (12 month average)	5.2%	5.7%	6.2%	5,371
Class of Worker (2014 5Y estimate)				
Private wage & salary	79.1%	78.9%	72.7%	55,775
Government	14.6%	15.2%	18.5%	14,227
Self-employed	6.1%	5.8%	8.4%	6,475
Unpaid family workers	0.2%	0.2%	0.4%	271
Households (2014 5Y estimate)				
With earnings	77.9%	76.8%	66.8%	54,305
With Social Security	29.3%	30.4%	42.5%	34,524
With retirement income	17.8%	18.5%	23.2%	18,824

Source: SYNEVA Economics, N.C. Department of Commerce, U.S. Census Bureau

As of 2015 the SWC's average weekly wage stood at \$633, which is 35 percent below the nation and 27 percent below the state (Figure 4 Table 2). After adjusting for inflation, SWC's average weekly wage lost \$6 or -0.9 percent over the last five years (Figure 5 Table 2). Over the same period North Carolina gained 3.2 percent, while the nation is up 2.8 percent; both equaling a net gain of \$26.

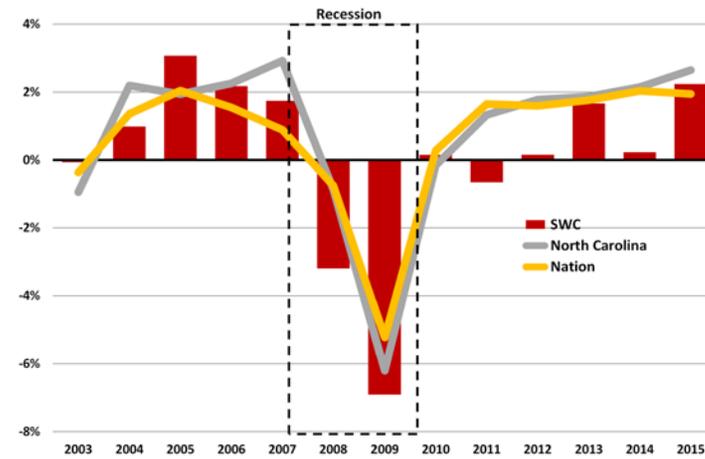
A broader measure of economic well-being is per capita income, which includes wages, salaries, proprietors' income, rental income, dividends, interest and government transfers such as social security. As of 2014 (the most current data available) the SWC's per capita income stood at \$31,613; 31 percent below the nation and 19 percent below the state (Figure 6 Table 2). After adjusting for inflation, SWC's per capita income gained \$169 or 0.5 percent over five years (Figure 7 Table 2). Over the same period North Carolina gained 1.7 percent, while the nation is up 6.1 percent.

Figure 2
SWC Total Employment



Source: SYNEVA Economics, N.C. Department of Commerce, third quarters

Figure 3
Annual Pace of Employment Growth



Source: SYNEVA Economics, N.C. Department of Commerce, U.S. Bureau of Labor Statistics

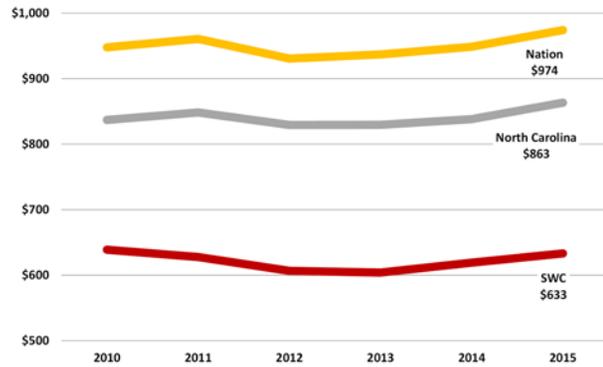
Table 2

	Average Weekly Wage <i>inflation adjusted</i>			Per Capita Income <i>inflation adjusted</i>		
	2015	5-Y Change (\$)	5-Y Change (%)	2014	5-Y Change (\$)	5-Y Change (%)
SWC	\$633	-\$6	-0.9%	\$31,613	\$169	0.5%
North Carolina	\$863	\$26	3.2%	\$39,171	\$657	1.7%
United States	\$974	\$26	2.8%	\$46,049	\$2,651	6.1%

Source: SYNEVA Economics, N.C. Department of Commerce, U.S. Bureau of Labor Statistics, Bureau of Economic Analysis

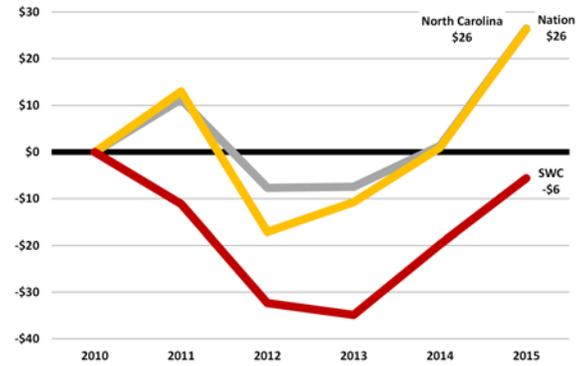


Figure 4
Average Weekly Wages
Inflation-Adjusted to 2015 dollars



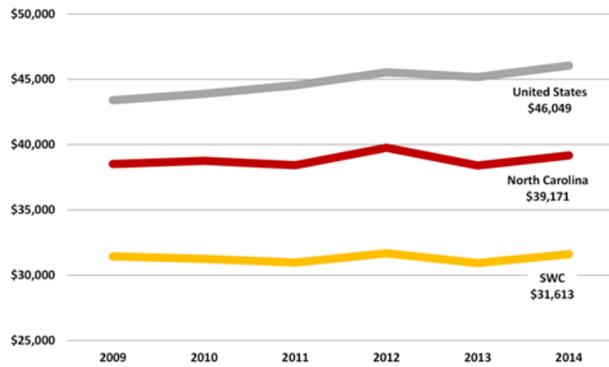
Source: SYNEVA Economics, N.C. Department of Commerce, U.S. Bureau of Labor Statistics

Figure 5
Average Weekly Wages
2010-2015 Net Change
Inflation-Adjusted, 2010 = 0



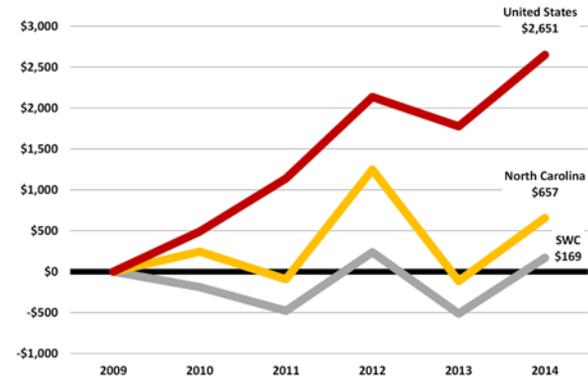
Source: SYNEVA Economics, N.C. Department of Commerce, U.S. Bureau of Labor Statistics

Figure 6
Per Capita Income
Inflation-Adjusted to 2014 dollars



Source: SYNEVA Economics, U.S. Bureau of Economic Analysis

Figure 7
Per Capita Income
2009-2014 Net Change
Inflation-Adjusted 2009=0

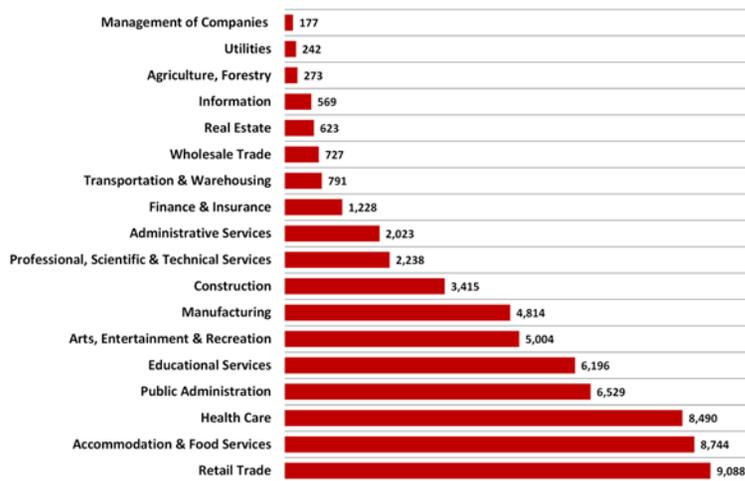


Source: SYNEVA Economics, U.S. Bureau of Economic Analysis

Of all 18 major industry sectors, three account for 42 percent of total employment in the SWC; *Retail Trade, Accommodation & Food Services* and *Health Care* (Figure 8). If *Public Administration* (mostly Government offices) and *Educational Services* are included, then together these five sectors comprise 62 percent of total employment.

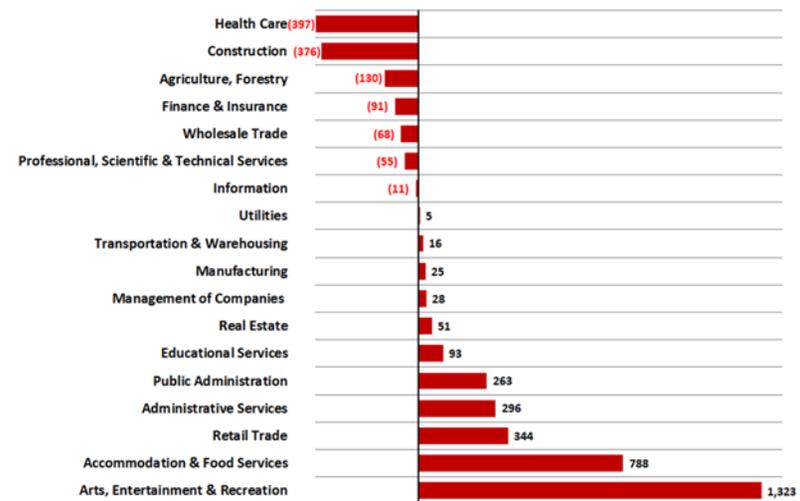
Over the last five years, eleven industry sectors have added employment in the SWC (Figure 9). However, two have contributed 65 percent of all gains; *Arts, Entertainment & Recreation* and *Accommodation & Food Services*. And among sectors losing employment, two have experienced 69 percent of all losses; *Health Care* and *Construction*.

Figure 8
SWC Major Industry Sector Employment



Source: SYNEVA Economics, N.C. Department of Commerce, 2015 3Q

Figure 9
SWC 2010-2015 Net Employment Change
Major Industry Sector Employment

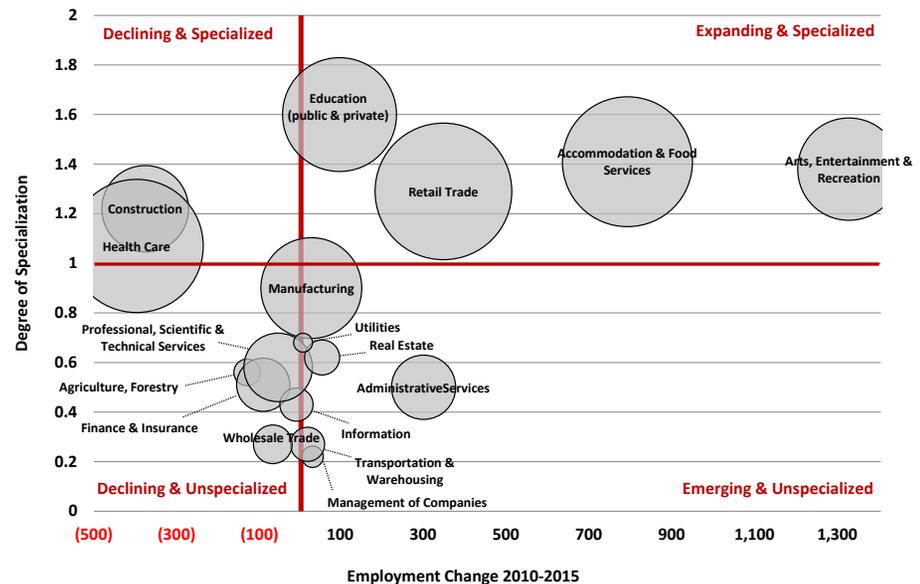


Source: SYNEVA Economics, N.C. Department of Commerce

A more complete assessment of industry dynamics in the SWC includes an examination of the degree of specialization² and industry wages.

Recent employment growth has occurred almost entirely among a few industry sectors with existing high degrees of specialization (Figure 10 Table 3). Concentrated growth among a handful of already specialized industries intensifies their role in the local economy and eventually leads to even higher degrees of local specialization relative to the nation. Industries in the *Emerging & Unspecialized* quadrant are typically recognized as having the potential to reach higher degrees of specialization. That is, with continued superior growth they can move up into the *Expanding & Specialized* quadrant. The SWC however has few current prospects viable to make this transition. The most significant growth among unspecialized sectors is in *Administrative Services*, which usually represents *Temporary Employment Services* and is not a practical sector for economic development focus.

Figure 10
SWC Specialization & Employment Change
Major Industry Sector Employment



Bubble size represents employment totals.

Source: SYNEVA Economics, N.C. Department of Commerce, EMS

² The degree of local specialization (also termed location quotient) is a ratio indicating the concentration of SWC employment relative to the nation. A degree of specialization equal to 1.0 means the employment concentration is equal to that of the nation. Ratios above 1.0 indicate higher relative concentrations and indicate areas of economic specialization; for example of ratio of 2.0 would mean an employment concentration double to that in the nation. The metric is used throughout the analysis and is an important means to detect economic uniqueness. In simple terms it shows what a regional economy is better at doing, or has developed as a distinct strength.

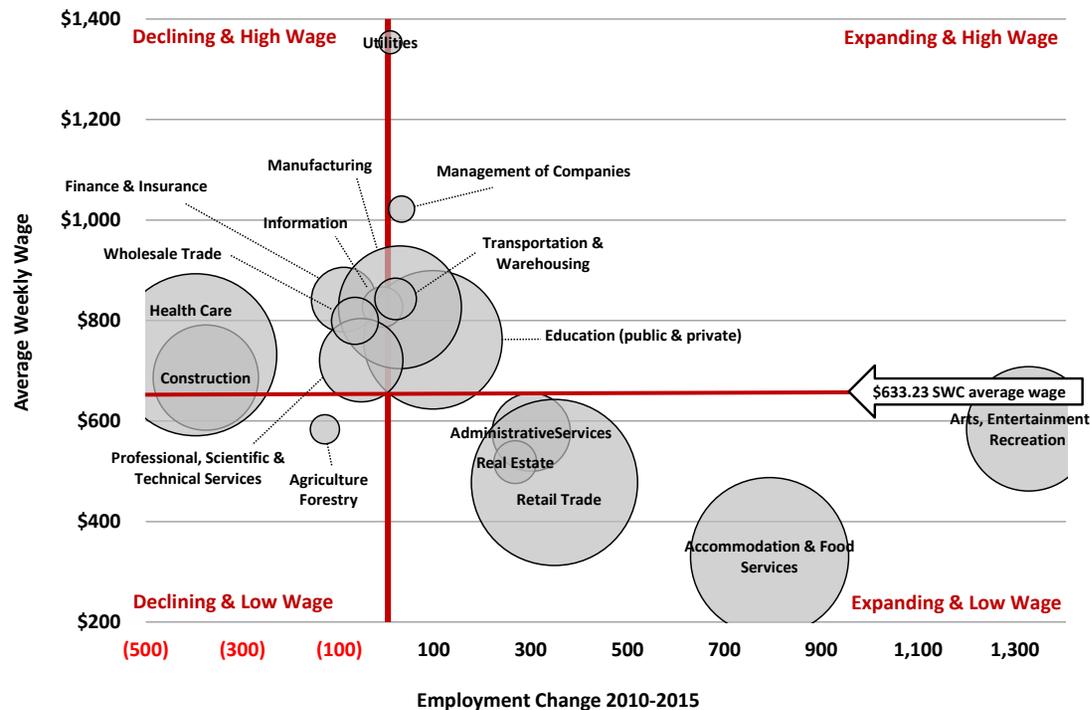
Table 3
SWC Specialization & Employment Change
Major Industry Sector Employment

Major Industry Sector	2015 Employment	2010-2015 Employment Change	Degree of Specialization
Expanding & Specialized			
Arts, Entertainment & Recreation	5,004	1,323	1.4
Accommodation & Food Services	8,066	788	1.4
Education (public & private)	6,196	93	1.6
Retail Trade	8,925	344	1.3
Declining & Specialized			
Construction	3,578	(376)	1.2
Health Care	8,491	(397)	1.1
Emerging & Unspecialized			
Transportation & Warehousing	556	16	0.3
Administrative Services	1,971	296	0.5
Real Estate	588	263	0.6
Management of Companies	219	28	0.2
Manufacturing	4,865	25	0.9
Utilities	169	16	0.7
Declining & Unspecialized			
Information	528	(11)	0.4
Professional, Scientific & Technical Services	2,245	(55)	0.6
Wholesale Trade	712	(68)	0.3
Finance & Insurance	1,355	(91)	0.5
Agriculture, Forestry	273	(130)	0.6

Source: SYNEVA Economics, N.C. Department of Commerce, EMSI

Examining sector growth against wages indicates the quality and level of economic contribution associated with industries. Using the SWC’s average weekly wage of \$633.23 as a gauge to delineate high and low wages, recent employment growth is clearly dominated by low wage industries (Figure 11 Table 4). Ninety-five percent of net new employment is in low wage industry sectors. Conversely, 88 percent of employment losses occurred in high wage industries.

Figure 11
SWC Wages & Employment Change
Major Industry Sector Employment



Bubble size represents employment totals.
 Source: SYNEVA Economics, N.C. Department of Commerce, EMSI



Table 4
SWC Wages & Employment Change
Major Industry Sector Employment

Major Industry Sector	2015 Employment	2010-2015 Employment Change	Average Weekly Wage
Expanding & High Wage			
Education (public & private)	6,196	93	\$761.82
Management of Companies	219	28	\$1,021.86
Manufacturing	4,865	25	\$826.42
Transportation & Warehousing	556	16	\$843.23
Utilities	169	5	\$1,353.89
Declining & High Wage			
Information	528	(11)	\$826.86
Professional, Scientific & Technical Services	2,245	(55)	\$721.25
Wholesale Trade	712	(68)	\$799.40
Finance & Insurance	1,355	(91)	\$841.73
Construction	3,578	(376)	\$686.45
Health Care	8,491	(397)	\$732.07
Expanding & Low Wage			
Arts, Entertainment & Recreation	5,004	1,323	\$584.43
Accommodation & Food Services	8,066	788	\$330.56
Retail Trade	8,925	344	\$477.86
Administrative Services	1,971	296	\$577.86
Real Estate	588	263	\$518.40
Declining & Low Wage			
Agriculture, Forestry	273	(130)	\$583.71

Source: SYNEVA Economics, N.C. Department of Commerce, EMSI

Industry Clustering

Industry clusters refer to groups of interconnected industries that typically purchase from one another or otherwise benefit from being in close proximity to each other. Clusters imply the presence of distinct economic ecosystems which support the identified group of participant industries (including suppliers, the educational system, incumbent worker skills, etc.). Industries may belong to several clusters. For economic development, industry clusters can help pinpoint unique areas of strength and economic drivers. Building on an existing industry cluster is considered less risky than looking to develop un-networked economic activities.

Nineteen industry clusters were identified in the SWC (Figure 12 and Table 5).³ In terms of total employment, the largest is *Health Services* which employs 8,491. *Education (Public & Private)* is second largest at 6,196. The smallest cluster, *Glass & Ceramics*, only employs 29, yet comprises nine firms.

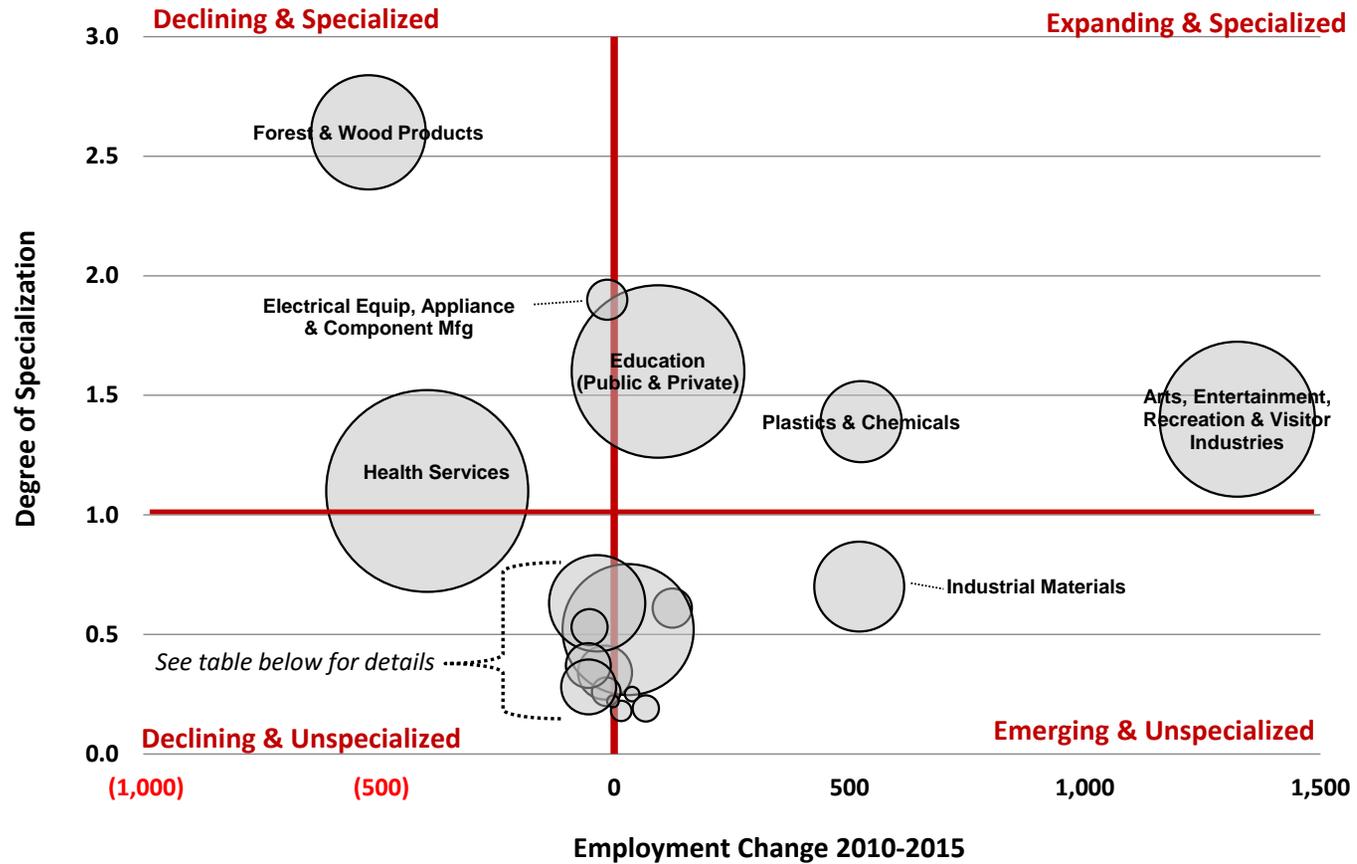
To examine local uniqueness and recent trends, the SWC clusters were organized into four major groups; combinations of expanding or declining and specialized or unspecialized.⁴ The SWC has three industry clusters in the Expanding & Specialized group (typically the most promising); *Arts, Entertainment, Recreation & Visitor Industries, Plastics & Chemicals* and *Education*.

The most locally specialized industry cluster is *Forest & Wood Products* with over twice the level of employment concentration than in the nation. Following next is the *Electrical Equip, Appliance & Component Mfg.* cluster, with a degree of specialization at 1.9. Both of these highly specialized clusters have experienced recent employment declines.

³ Original cluster definitions created by the Center for Regional Development at Purdue University with further modifications by EMSI and SYNEVA Economics.

⁴ See Footnote 2.

Figure 12
SWC Industry Clusters
Specialization & Change



Bubble size reflects total employment; industries may be in more than one cluster.
 Source SYNEVA Economics, EMSI, Center for Regional Development Purdue University

Table 5
SWC Industry Clusters
Specialization & Change

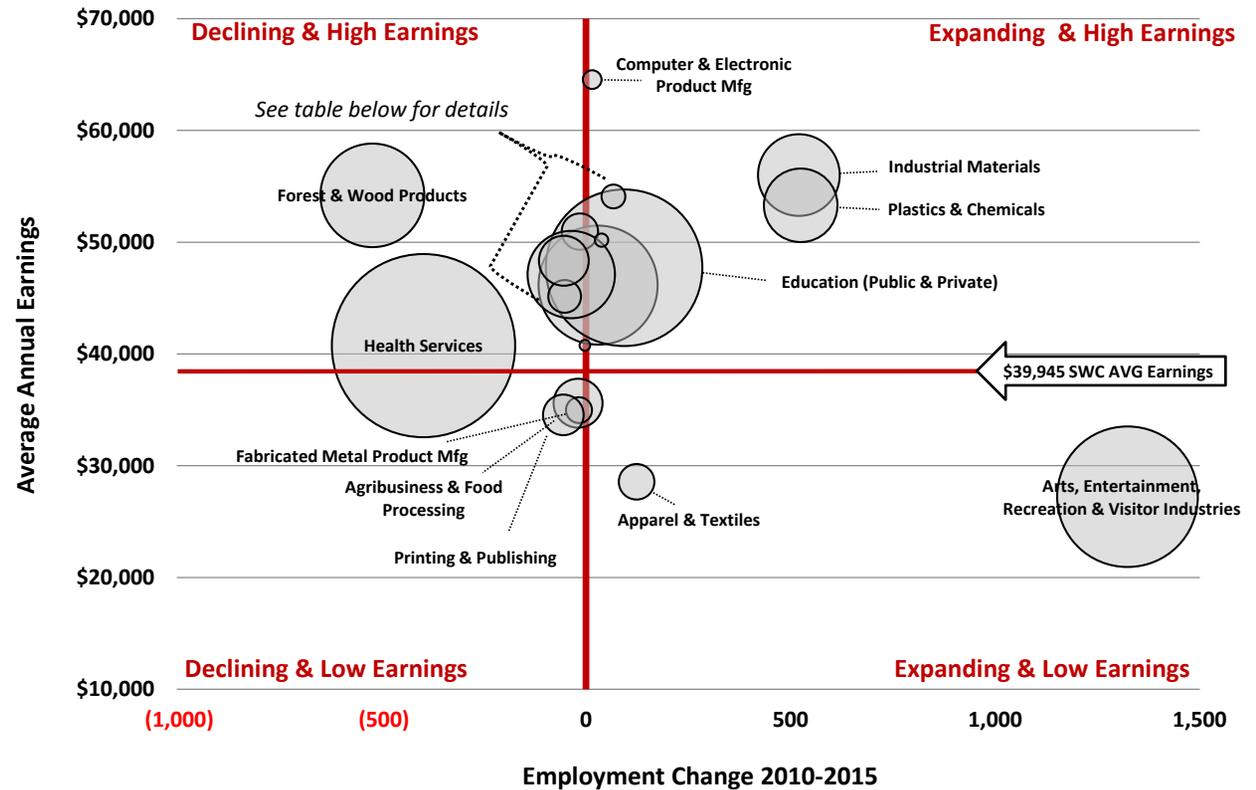
Cluster	2015 Employment	2010-2015 Employment Change	Degree of Specialization	Business Establishments
Expanding & Specialized				
Arts, Entertainment, Recreation & Visitor Industries	5,004	1,323	1.4	269
Plastics & Chemicals	1,367	524	1.4	31
Education (Public & Private)	6,196	93	1.6	111
Declining & Specialized				
Forest & Wood Products	2,723	(522)	2.6	106
Electrical Equip, Appliance & Component Mfg.	334	(15)	1.9	6
Health Services	8,491	(397)	1.1	165
Emerging & Unspecialized				
Business & Financial Services	3,584	29	0.5	606
Industrial Materials	1,684	520	0.7	43
Apparel & Textiles	320	123	0.6	33
Transportation Equip Mfg.	143	67	0.2	4
Computer & Electronic Product Mfg.	88	15	0.2	3
Primary Metal Mfg.	45	38	0.3	2
Declining & Unspecialized				
Information Technology & Telecom	1,930	(36)	0.6	171
Transportation & Logistics	628	(54)	0.3	78
Agribusiness & Food Processing	607	(19)	0.3	67
Printing & Publishing	418	(55)	0.4	65
Machinery Mfg.	271	(52)	0.5	9
Fabricated Metal Product Mfg.	171	(17)	0.3	10
Glass & Ceramics	29	(3)	0.2	9

Industries may be in more than one cluster.

Source SYNEVA Economics, EMSI, Center for Regional Development Purdue University

Figure 13
SWC Industry Clusters
Annual Earnings & Change

When average annual earnings of each cluster are considered; seven clusters with earnings above the SWC average of \$39,945 experienced growth over the 2010-2015 period (Figure 13 Table 6). The two with the most growth are *Plastics & Chemicals* and *Industrial Materials*. The largest cluster with earnings greater than the SWC average and positive growth is *Education (Public & Private)*.



Bubble size reflects total employment; industries may be in more than one cluster.
 Source SYNEVA Economics, EMSI, Center for Regional Development Purdue University

Table 6
SWC Industry Clusters
Annual Earnings & Change

Cluster	Average Annual Earnings	2010-2015 Employment Change	2015 Employment
Expanding & High Earnings			
Plastics & Chemicals	\$53,294	524	1,367
Industrial Materials	\$56,003	520	1,684
Education (Public & Private)	\$47,713	93	6,196
Transportation Equip Mfg	\$54,093	67	143
Primary Metal Mfg	\$50,187	38	45
Business & Financial Services	\$46,154	29	3,584
Computer & Electronic Product Mfg	\$64,542	15	88
Declining & High Earnings			
Glass & Ceramics	\$40,777	(3)	29
Electrical Equip, Appliance & Component Mfg	\$50,949	(15)	334
Information Technology & Telecom	\$47,107	(36)	1,930
Machinery Mfg	\$45,160	(52)	271
Transportation & Logistics	\$48,340	(54)	628
Health Services	\$40,746	(396)	8,491
Forest & Wood Products	\$54,185	(522)	2,723
Expanding & Low Earnings			
Arts, Entertainment, Recreation & Visitor Industries	\$27,227	1,323	5,004
Apparel & Textiles	\$28,571	123	320
Declining & Low Earnings			
Fabricated Metal Product Mfg	\$34,978	(17)	171
Agribusiness & Food Processing	\$35,593	(19)	607
Printing & Publishing	\$34,543	(55)	418

Industries may be in more than one cluster.

Source SYNEVA Economics, EMSI, Center for Regional Development Purdue University

Supply Chains/Gaps

Businesses all purchase supplies from other businesses. Together these suppliers comprise a businesses' supply chain. For example a typical grocery store's supply chain would include agricultural products, bakery goods, trucking support, advertising services and dozens of other suppliers necessary to operate the business.

Supply chains can be viewed for individual industries or aggregated for an entire geographic area; totaling the expected purchases for all businesses in the area. These industry suppliers can then be matched against the presence of other industries which are likely to satisfy those requirements.⁵ The lack of sufficient suppliers to satisfy the industry requirements within an area are identified as supply chain gaps. These missing industry requirements must be imported into the area.

Identification of supply chain gaps can play an important role in selection of optimal industries to target for attraction or expansion. For economic development, attraction of industries which satisfy supply chain gaps represent win-win opportunities; besides the usual job creation benefits of a new employer they also offer established local demand for that industry and may even present cost savings for existing industries reliant on those supplies. Industries which satisfy local supply chain gaps should support stronger area business-to-business connections and overall local economic stability.

It is estimated that 77 percent of the SWC's total industry requirements are imported into the area (Table 7). Among major sectors, *Government* has the largest absolute supply gap at \$2.3 trillion, followed by *Manufacturing* at \$1.9 trillion. In percentage terms, at 96 percent *Manufacturing* also has one of the highest portions of its requirements imported from outside the SWC.

⁵ Industry requirements are derived from the U.S. Bureau of Economic Analysis' national Input-Output model.

Table 7
SWC Industry Requirements
Major Industry Sectors

Industry	Total Requirements (\$)	Satisfied In SWC (\$)	Imported from Outside SWC (\$)	Satisfied In SWC (%)	Imported from Outside SWC (%)
Total	\$11,510M	\$2,688M	\$8,822M	23%	77%
Government	\$3,139M	\$800M	\$2,339M	25%	75%
Manufacturing	\$1,978M	\$84M	\$1,894M	4%	96%
Health Care	\$837M	\$318M	\$519M	38%	62%
Finance & Insurance	\$668M	\$160M	\$508M	24%	76%
Wholesale Trade	\$511M	\$36M	\$474M	7%	93%
Professional, Scientific & Technical Services	\$548M	\$116M	\$432M	21%	79%
Construction	\$614M	\$221M	\$393M	36%	64%
Information	\$436M	\$84M	\$352M	19%	81%
Retail Trade	\$585M	\$279M	\$306M	48%	52%
Real Estate	\$409M	\$139M	\$271M	34%	66%
Transportation & Warehousing	\$285M	\$35M	\$250M	12%	88%
Management of Companies	\$168M	\$3M	\$165M	2%	98%
Administrative Support Services	\$207M	\$56M	\$151M	27%	73%
Accommodation & Food Services	\$302M	\$158M	\$144M	52%	48%
Mining, Quarrying & Oil/Gas Extraction	\$132M	\$9M	\$123M	7%	93%
Utilities	\$162M	\$40M	\$122M	24%	76%
Other Services	\$207M	\$97M	\$110M	47%	53%
Private Educational Services	\$114M	\$10M	\$104M	9%	91%
Crop & Animal Production	\$113M	\$12M	\$100M	11%	89%
Arts, Entertainment & Recreation	\$94M	\$31M	\$63M	33%	67%

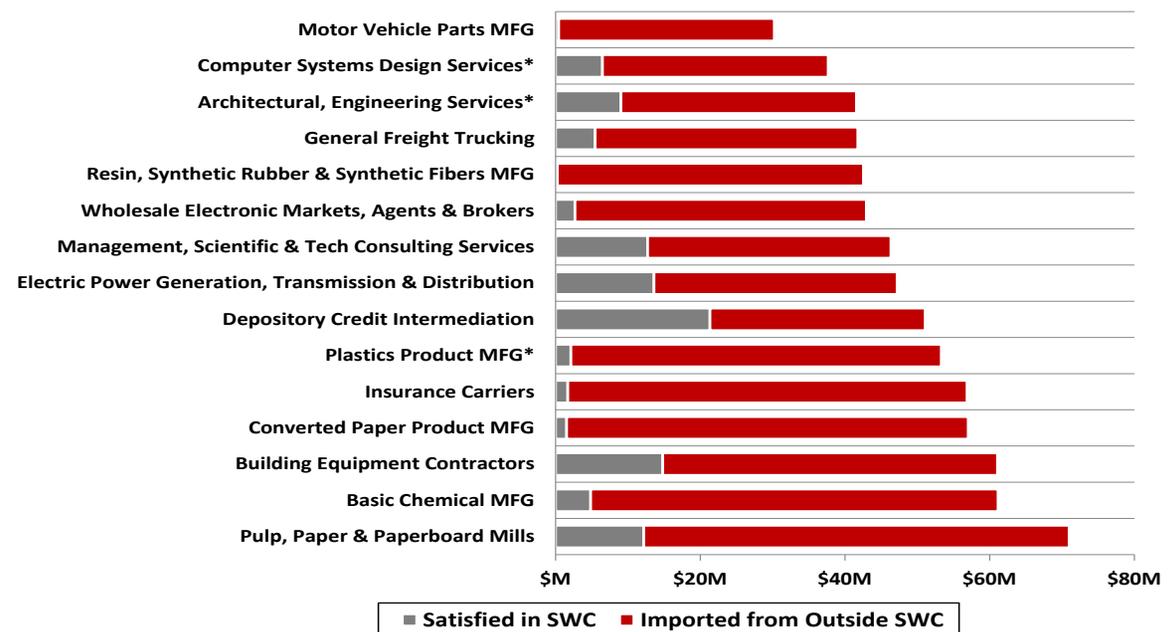
Source: EMSI

Selecting which specific supply chain gaps to focus on is difficult because the gaps are sizeable and numerous in the SWC. An examination of all 300 subsector industry suppliers shows that 59, or 20 percent, have no presence in the SWC. For many the reason for a lack of local operations is obvious; such a *Petroleum Refining* or *Aluminum Processing*, plus it's a recognition that no economic region contains all of its suppliers.

For economic development purposes, supply gap analysis should focus on those industries in which there are a reasonable opportunities to attract or encourage expansion. To develop a manageable list of supply chain gaps for further attention, the following criteria was employed; *Government* was removed due to internal procurement policies and industries with no current operations in the SWC were also removed (as there may likely be strong business rationales for their absence).

The final top fifteen industry supply chain gaps in the SWC represent \$633 million of local industry requirements currently imported from outside the area (Figure 14 and Table 8). Of these, six are in *Manufacturing* and three in *Professional, Scientific & Technical Services*. Three are included in the final list of optimal targets (Page 56).

Figure 14
Top SWC Supply Chain Gaps



* Identified as an optimal target.

Source: SYNEVA Economics, EMSI, Government sector excluded

Table 8
Top SWC Supply Chain Gaps

Industry	Satisfied in SWC	Imported from Outside SWC
Pulp, Paper & Paperboard Mills	\$12M	\$59M
Basic Chemical MFG	\$5M	\$56M
Building Equipment Contractors	\$15M	\$46M
Converted Paper Product MFG	\$2M	\$56M
Insurance Carriers	\$2M	\$55M
Plastics Product MFG*	\$2M	\$51M
Depository Credit Intermediation	\$21M	\$30M
Electric Power Generation, Transmission & Distribution	\$14M	\$34M
Management, Scientific & Tech Consulting Services	\$13M	\$34M
Wholesale Electronic Markets, Agents & Brokers	\$3M	\$40M
Resin, Synthetic Rubber & Synthetic Fibers MFG	\$0.3M	\$42M
General Freight Trucking	\$5M	\$36M
Architectural, Engineering Services*	\$9M	\$33M
Computer Systems Design Services*	\$6M	\$31M
Motor Vehicle Parts MFG	\$0.4M	\$30M

* Identified as an optimal target.

Source: SYNEVA Economics, EMSI, Government sector excluded

Worker Occupations & Skills/Knowledge

Worker Occupations

The economic development field is increasingly recognizing that understanding a *local workforce* is critical to understanding the true embedded capacity and potential of a local economy. While categorizing employment according to industry classification is a common means to assess an economy, knowing worker occupations and skills provides a deeper and more realistic understanding of what an economy does and can do. Industries may expand or decline, whereas workers retain their learned occupational knowledge and skills.

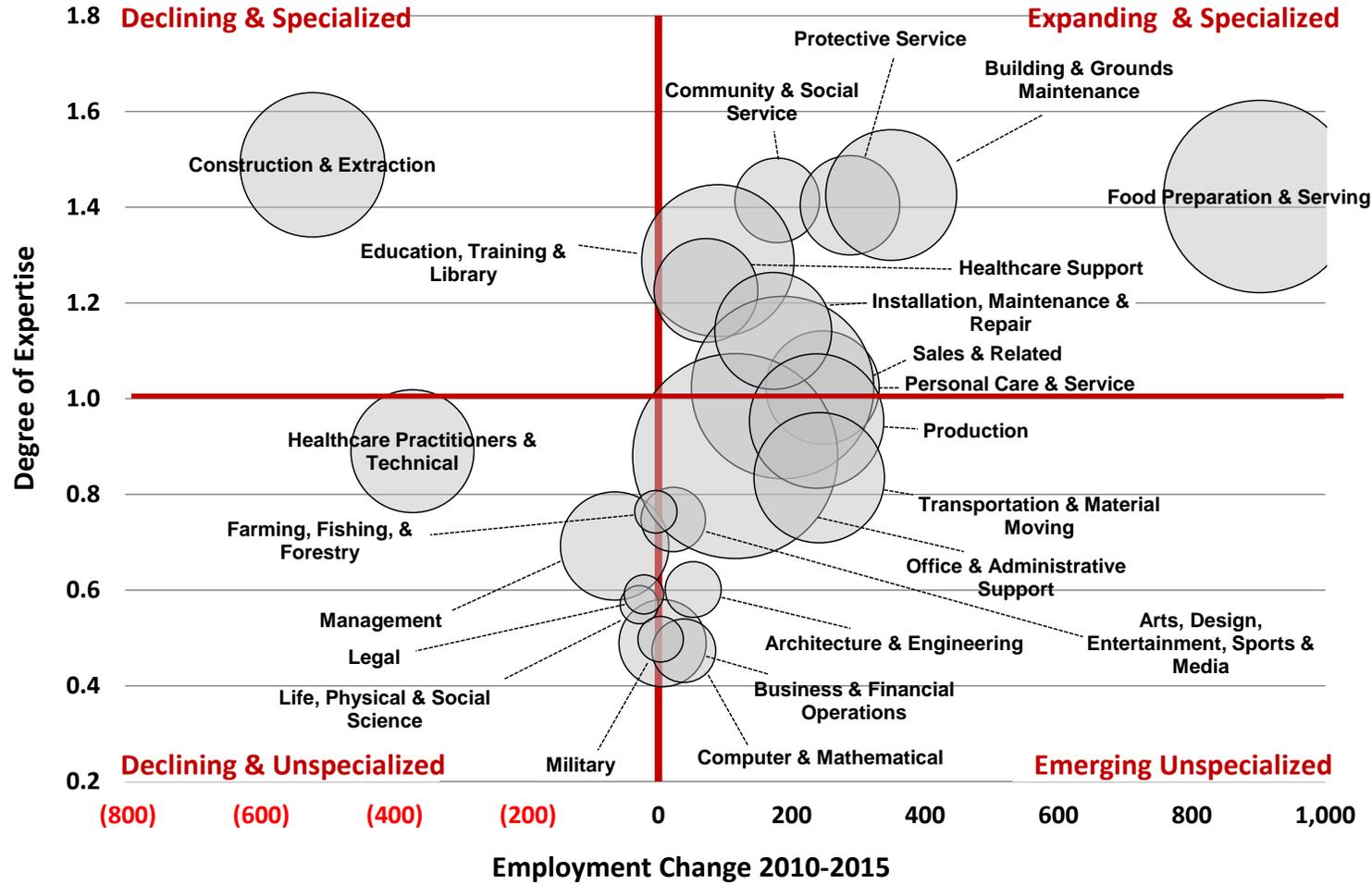
As industries can be grouped according to their shared product similarities, occupations can be grouped according to the work performed and the skills, education and/or training needed to perform that work. The U.S. Bureau of Labor Statistics aggregates occupations into 22 major groups.

The SWC experienced growth in 17 of 22 occupational groups over the recent 2010 to 2015 period (Figure 15 Table 9). Of these, seven groups exhibit a high degree of local specialization.⁶ The *Food Preparation & Serving* group is the largest group which has experienced recent growth and has a high degree of specialization, followed by *Building & Grounds Maintenance*. *Construction* was the one occupational group with a high degree of specialization and declining employment over the last five years.

When median hourly earnings of each occupational group are considered, it is clear that growth has been led in low earnings occupations (Figure 16 and Table 10). Using the SWC's overall median hourly earnings of \$15.73 as a scale; high earning occupations experienced a net gain of 71 jobs, while low earnings occupations saw a net gain of 2,114 jobs. The *Food Preparation & Serving* and *Building & Grounds Maintenance* groups led low earnings growth, while *Healthcare Practitioners & Technical* occupations had the greatest losses among higher earners.

⁶ See Footnote 2.

Figure 15
SWC Occupational Employment
Specialization & Change



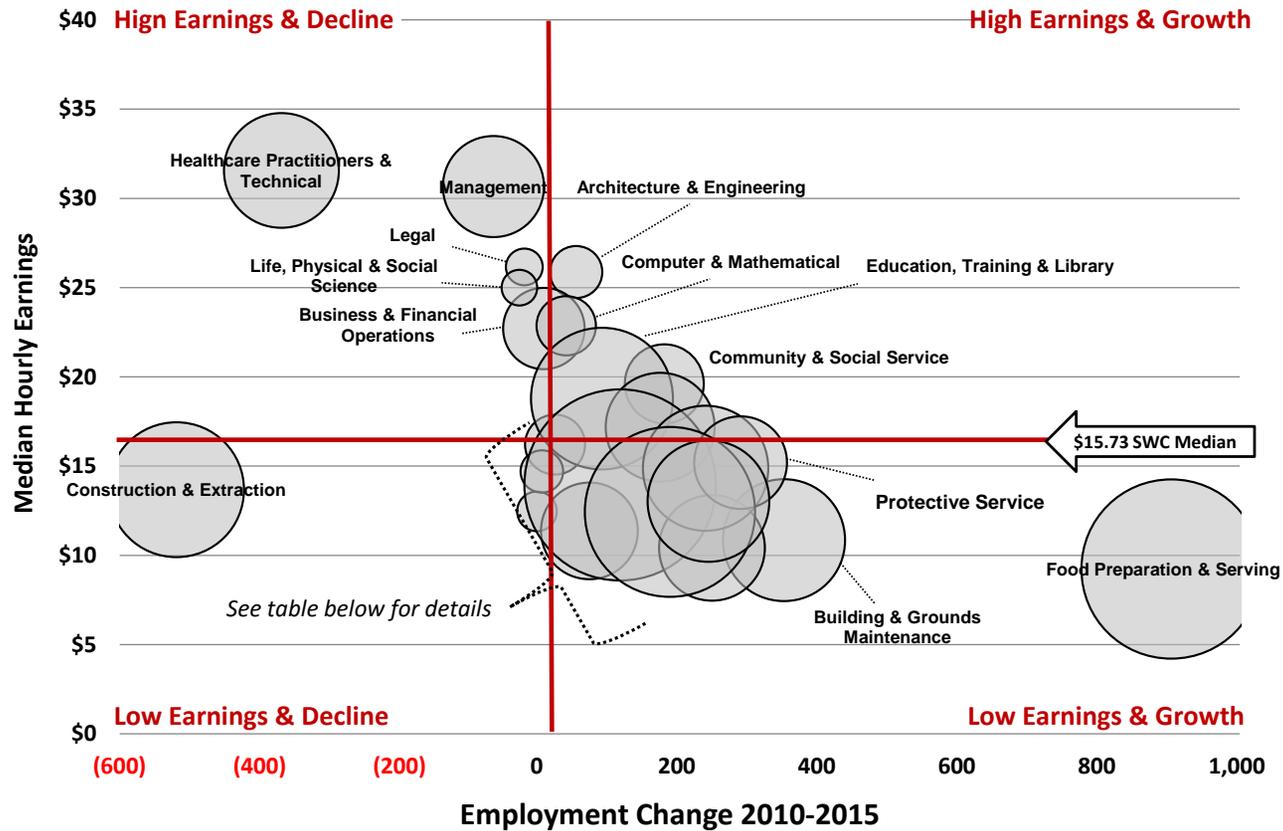
Bubble size reflects total employment.
 Source: SYNEVA Economics, EMSI

Table 9
SWC Occupational Employment
Specialization & Change

Occupational Group	2015 Employment	2010-2015 Employment Change	Degree of Specialization
Expanding & Specialized			
Building & Grounds Maintenance	3,921	349	1.4
Food Preparation & Serving	8,479	902	1.4
Community & Social Service	1,640	178	1.4
Protective Service	2,266	287	1.4
Education, Training & Library	5,300	89	1.3
Healthcare Support	2,463	71	1.2
Installation, Maintenance & Repair	3,123	172	1.1
Declining & Specialized			
Construction & Extraction	4,797	(519)	1.5
Emerging & Unspecialized			
Personal Care & Service	2,939	246	1.0
Sales & Related	7,618	186	1.0
Production	4,134	237	1.0
Office & Administrative Support	9,637	115	0.9
Transportation & Material Moving	3,891	241	0.8
Arts, Design, Entertainment, Sports & Media	947	22	0.7
Architecture & Engineering	716	52	0.6
Military	475	3	0.5
Business & Financial Operations	1,742	6	0.5
Computer & Mathematical	925	38	0.5
Declining & Unspecialized			
Healthcare Practitioners & Technical	3,464	(369)	0.9
Farming, Fishing, & Forestry	413	(4)	0.8
Management	2,687	(66)	0.7
Legal	353	(22)	0.6
Life, Physical & Social Science	334	(29)	0.6

Source: SYNEVA Economics, EMSI

Figure 16
SWC Occupational Employment
Median Hourly Earnings & Change



Bubble size reflects total employment.
 Source: SYNEVA Economics, EMSI

Table 10
SWC Occupational Employment
Specialization & Median Hourly Earnings

Occupational Group	Median Hourly Earnings	2010-2015 Employment Change	2015 Employment
High Earnings & Growth			
Community & Social Service	\$19.81	178	1,640
Installation, Maintenance & Repair	\$17.39	172	3,123
Education, Training & Library	\$18.99	89	5,300
Architecture & Engineering	\$26.07	52	716
Computer & Mathematical	\$23.07	38	925
Arts, Design, Entertainment, Sports & Media	\$16.41	22	947
Business & Financial Operations	\$22.91	6	1,742
High Earnings & Decline			
Legal	\$26.36	(22)	353
Life, Physical & Social Science	\$25.20	(29)	334
Management	\$30.86	(66)	2,687
Healthcare Practitioners & Technical	\$31.77	(369)	3,464
Low Earning & Growth			
Food Preparation & Serving	\$9.43	902	8,479
Building & Grounds Maintenance	\$11.05	349	3,921
Protective Service	\$15.39	287	2,266
Personal Care & Service	\$10.62	246	2,939
Transportation & Material Moving	\$13.24	241	3,891
Production	\$15.08	237	4,134
Sales & Related	\$12.64	186	7,618
Office & Administrative Support	\$14.14	115	9,637
Healthcare Support	\$11.57	71	2,463
Military	\$14.90	3	475
Low Earnings & Decline			
Farming, Fishing, & Forestry	\$12.66	(4)	413
Construction & Extraction	\$13.88	(519)	4,797

Source: SYNEVA Economics, EMSI

Worker Skills & Knowledge

“Worker skills” consistently rank at or near the top of factors important to businesses expansion or location decisions. However, defining what “skills” really mean, and how they apply to employers and workers is a more complex question.

For this analysis, strict definitions of precise worker skills are used. A worker skill is a *developed capacity to perform a certain work activity*. Particular skills are defined by the Occupational Information Network (O*NET), developed under the sponsorship of the US Department of Labor/Employment and Training Administration. O*NET conducts a robust, ongoing survey and data collection program of 940 occupations, defining their key features under a set of standardized, and measurable variables. O*NET measures the importance of 22 individual skills for each occupation relative to the performance of that occupation. The skills are further organized under three major skill groups.

Defining High-Skilled Workers

All occupations in the SWC’s workforce were measured according to the scores for each of the 22 skills. To identify “high-skilled” workers, only occupations with scores in the top 25 percent of *importance* for that particular skill were selected. For example, of all 940 occupations, 198 score in the top 25 percent of importance for the *Service Orientation* skill:⁷ this includes occupations such as *Registered Nurses, Concierges* and *Special Education Teachers*. Together the 198 occupations represent 35,880 workers in the SWC’s workforce. These workers are employed in positions in which the *Service Orientation* skill is critical and their employment confirms that they have and perform the skill regularly.

Locally Strong Workforce Skills

To identify which skills are locally strong, the proportion of high-skilled workers in the SWC was compared to the proportion nationwide.⁸ The results show that SWC’s workforce is strong in eight worker skills (see Figure 17 Table 11). Six of the eight are in the *Technical Skills* group. Among individual skills, *Operation and Control*⁹ has the highest index score at 1.2, meaning the local proportion of workers highly skilled in *Operation and Control* is roughly 20 percent greater in the SWC than in the nation. In the

⁷ Defined as: actively looking for ways to help people.

⁸ See Footnote 2.

⁹ Defined as: controlling operations of equipment or systems.

SWC's workforce there are 11,019 workers highly skilled in *Operation and Control*. To employers seeking workers with this skill, the SWC will offer a significant pool of candidates relative to the size of the economy.

Figure 17
SWC Workforce Skills
Degree of Specialization



Workers can be employed in occupations that score high in several skills, so they may be counted in several skill categories.
 Source: SYNEVA Economics, EMSI, Occupational Information Network (O*NET)

Table 11
SWC Workforce Skills
Degree of Specialization

Skill	Degree of Specialization	# Workers
Technical Skills		
Complex Problem Solving	0.8	10,502
Equipment Maintenance	1.1	8,975
Equipment Selection	1.1	11,516
Installation	1.0	13,115
Operation and Control	1.2	11,019
Operation Monitoring	1.1	9,590
Operations Analysis	0.8	10,592
Programming	0.6	7,824
Quality Control Analysis	1.0	9,193
Repairing	1.1	10,114
Technology Design	0.8	8,807
Troubleshooting	1.0	8,785
Resource Management Skills		
Management of Financial Resources	0.9	19,330
Management of Material Resources	0.9	17,707
Management of Personnel Resources	1.0	19,372
Time Management	0.9	25,295
Social Skills		
Coordination	1.0	27,653
Instructing	1.1	18,544
Negotiation	0.9	25,043
Persuasion	0.9	24,354
Service Orientation	1.1	35,880
Social Perceptiveness	1.0	23,652

Workers can be employed in occupations that score high in several skills, so they may be counted in several skill categories.

*Source: SYNEVA Economics, EMSI, Occupational Information Network (O*NET)*

Workforce knowledge refers to *the acquisition of principles and facts related to a general field of business*. A worker's experiences play a greater role in workforce *knowledge* than in workforce *skills*. To many employers the terms are likely synonymous. Similar to the term skills, *workforce knowledge* or *knowledge-worker* are used frequently, but rarely defined or applied with much precision.

For this analysis, strict definitions of precise areas of knowledge are used. Particular areas of knowledge are defined by the Occupational Information Network (O*NET). And like skills, O*NET measures the importance of areas of knowledge for each occupation relative to the performance of that occupation. There are 32 areas of individual areas of workforce knowledge which fall within eight major knowledge groups.

Defining High-Knowledge Workers

All occupations in the SWC's workforce were measured according to the scores for each of the 33 areas of knowledge. To identify "high-knowledge" workers only occupations with scores in the top 25 percent of *importance* for each area of knowledge were selected. For example, 194 occupations scored in the top 25 percent of importance for the *Design*¹⁰ area of knowledge. Top scoring occupations with *Design* knowledge include *Interior Designers*, *Landscape Architects* and *Set & Exhibit Designers*. Together the 194 occupations represent 8,359 workers in the SWC's workforce.

Locally Strong High-Knowledge Workers

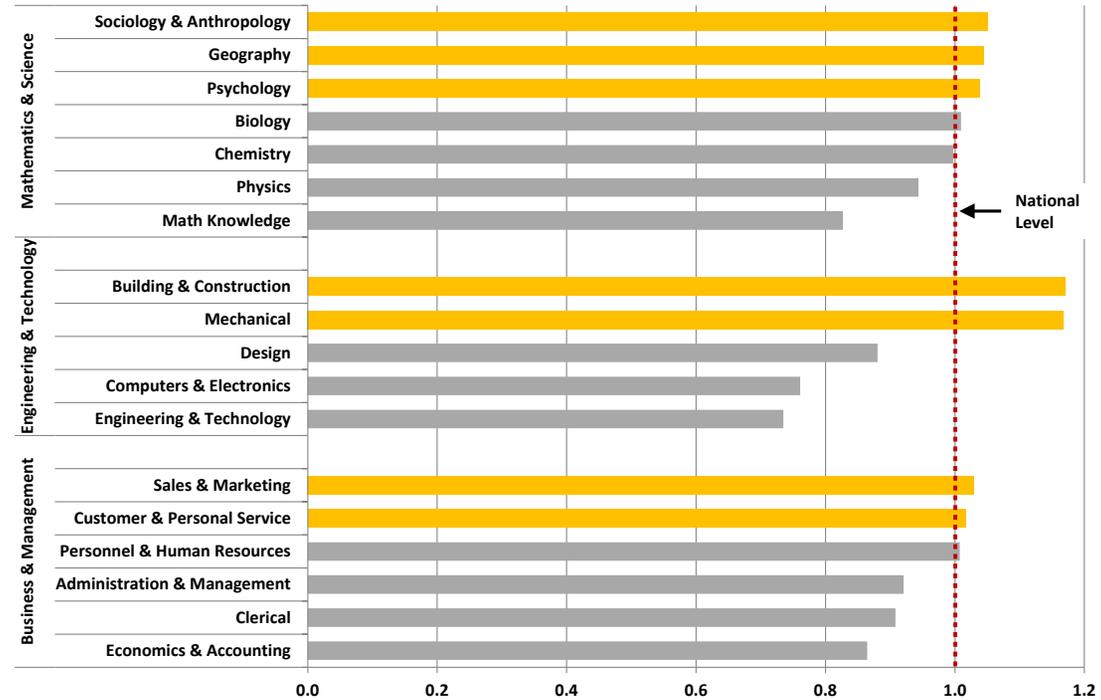
To identify which areas of workforce knowledge are locally strong, the proportion of high-knowledge workers in the SWC's was compared to the proportion nationwide.¹¹ The results show that the SWC's workforce is strong in 16 areas of knowledge (see Figures 18, 19 Tables 12, 13). Four of these locally strong areas of workforce knowledge are within the *Education & Training* group and another three are in *Mathematics & Science*. This likely reflects the influence of Western Carolina University.

¹⁰ Defined as: knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.

¹¹ See Footnote 2.

The strongest knowledge degree of specialization score at 1.2 is *Public Safety & Security*.¹² In the SWC workforce there are 15,166 workers with high-knowledge of *Public Safety & Security*. To employers seeking workers with a high level of knowledge in this area, the SWC offers a significant pool of candidates relative to the size of the economy.

Figure 18
SWC Workforce Knowledge
Degree of Specialization



Workers can be employed in occupations that score high in several knowledge areas, so they may be counted in several knowledge categories.

Source: SYNEVA Economics, EMSI, Occupational Information Network (O*NET)

¹² Defined as: knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.

Table 13
SWC Workforce Knowledge
Degree of Specialization

Knowledge	Degree of Specialization	# Workers
Business & Management		
Administration & Management	0.9	17,610
Clerical	0.9	19,233
Customer & Personal Service	1.0	24,187
Economics & Accounting	0.9	16,972
Personnel & Human Resources	1.0	17,237
Sales & Marketing	1.0	22,513
Engineering & Technology		
Building & Construction	1.2	13,119
Computers & Electronics	0.8	9,484
Design	0.9	8,359
Engineering & Technology	0.7	6,961
Mechanical	1.2	10,526
Mathematics & Science		
Biology	1.0	11,870
Chemistry	1.0	9,005
Geography	1.0	11,948
Math Knowledge	0.8	14,119
Physics	0.9	6,542
Psychology	1.0	18,714
Sociology & Anthropology	1.1	16,319

Workers can be employed in occupations that score high in several knowledge areas, so they may be counted in several knowledge categories.

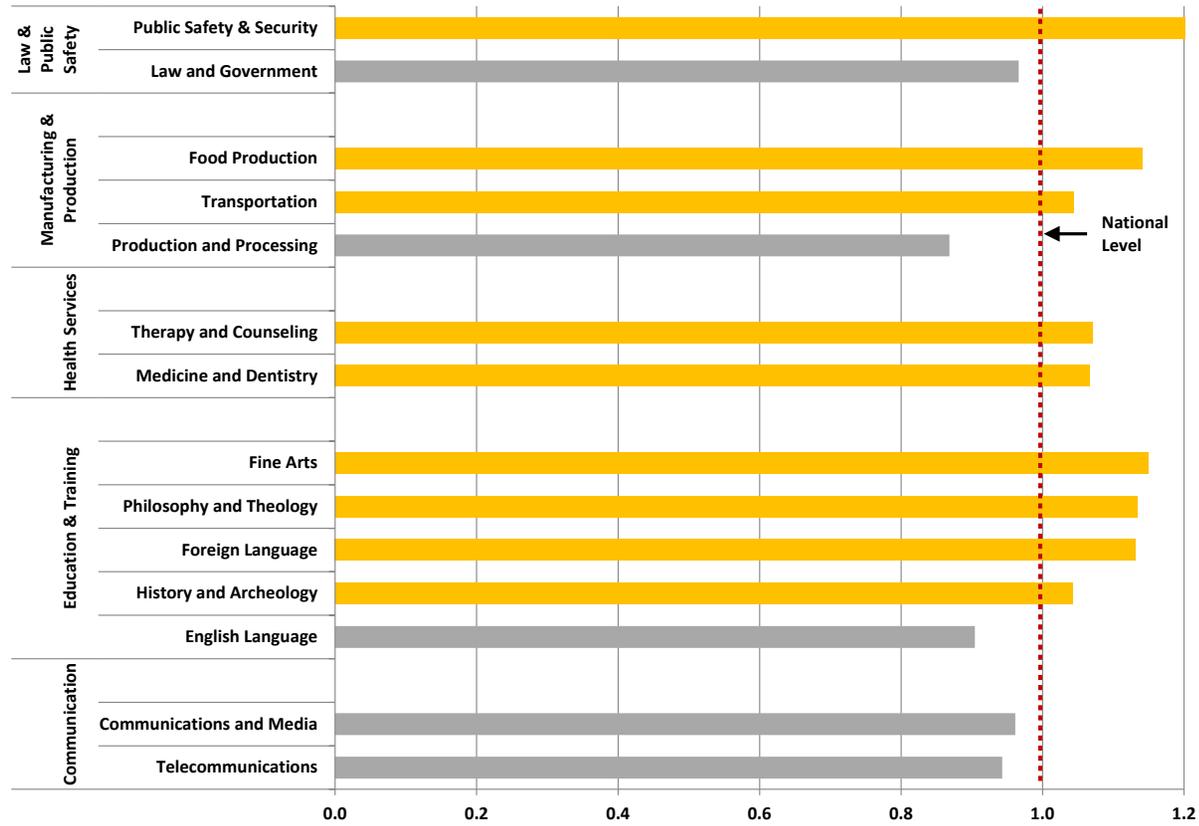
*Source: SYNEVA Economics, EMSI, Occupational Information Network (O*NET)*

Table 12
SWC Workforce Knowledge
Degree of Specialization

Knowledge	Degree of Specialization	# Workers
Communication		
Communications and Media	1.0	15,327
Telecommunications	0.9	17,108
Education & Training		
English Language	0.9	12,562
Fine Arts	1.1	16,687
Foreign Language	1.1	17,035
History and Archeology	1.0	11,766
Philosophy and Theology	1.1	16,129
Health Services		
Medicine and Dentistry	1.1	18,013
Therapy and Counseling	1.1	18,218
Manufacturing & Production		
Food Production	1.1	31,269
Production and Processing	0.9	8,930
Transportation	1.0	15,685
Law & Public Safety		
Law and Government	1.0	11,875
Public Safety & Security	1.2	15,166

*Source: SYNEVA Economics, EMSI, Occupational Information Network (O*NET)*

Figure 19
SWC Workforce Knowledge
Degree of Specialization



Source: SYNEVA Economics, EMSI, Occupational Information Network (O*NET)

Individual Business Records

An analysis of individual business records provides insights into the SWC economy not possible with traditional government databases. The main benefit gained is the ability to follow individual businesses over time. By law government databases cannot reveal any information about individual businesses.

The analysis of individual business records does have limitations that should be acknowledged. The information is collected via a broad combination of public records such as; white page directories, county records, media subscriptions, utility files, annual reports, industry directories, press releases and news feeds. Additionally, firms are routinely contacted to verify the reported data. From these records database providers generate sales and employment estimates. Thus, although individual business records provide specific details such as location, years of operation, and product/service description; the employment and sales data should be considered as estimates.

The analysis of individual business records in the SWC was conducted for the years of 2010 to 2015.¹³ The annual number of individual businesses on record in the SWC ranged from a low of 8,478 in 2011 to a high of 10,777 in 2014 (Table 14). By themselves the change in the number of records each year demonstrates the volatility of business creation and destruction. For the analysis only business records with estimated local sales were considered, this represented 79 percent of all records and avoids including establishments such as churches, utilities, schools and government offices.

Table 14
SWC Individual Business Records

	2010	2011	2012	2013	2014	2015
Individual Business Records	9,872	8,478	10,187	10,618	10,777	10,695
Number Analyzed*	7,886	6,817	8,048	8,491	8,435	8,298

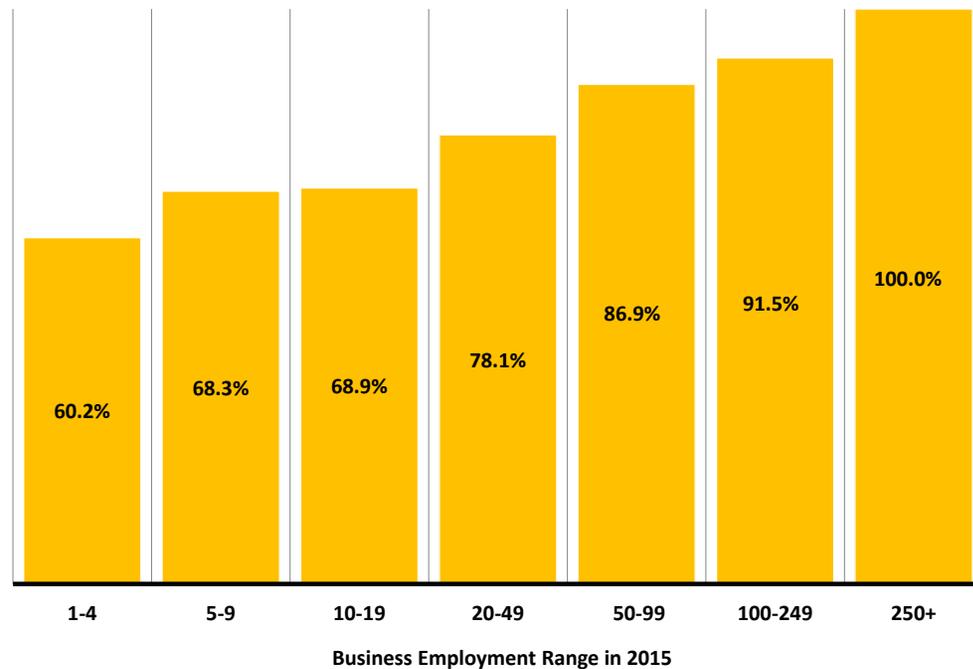
**Does not include churches, schools (public and private), utilities and government offices.*

Source: SYNEVA Economics, Infogroup™ Government Division

¹³ Source: Infogroup™ Government Division. The firm maintains a database of 24 million U.S. businesses, employing 350 staff researchers for verification and updating.

Of the 8,298 business records in 2015, 5,433 were also in the 2010 database; meaning 69 percent of SWC’s businesses are five or more years old. Business size is strongly related to survivorship. While all businesses with 250 or more employees survived over the last five years, only sixty percent of with those with one to four employees have existed over the same period in the SWC (Figure 20).

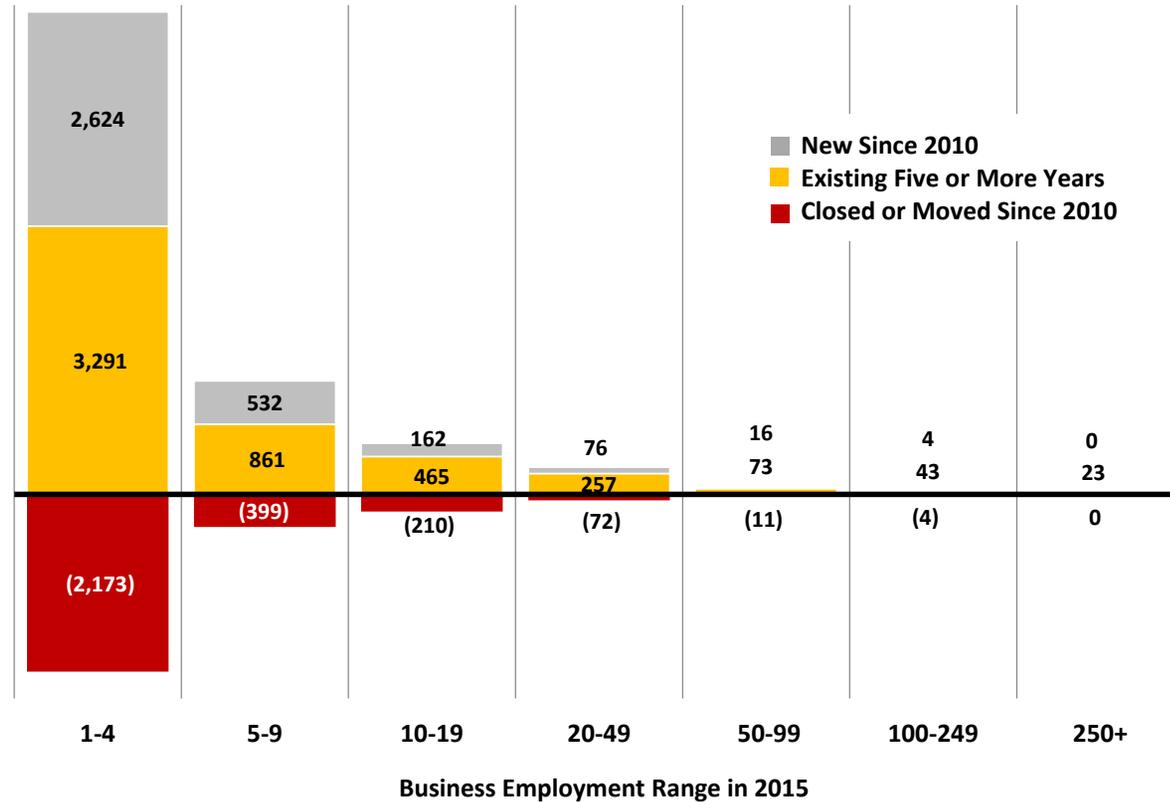
Figure 20
SWC Five-Year Survivorship 2010-2015
Businesses by Employment Range



Does not include churches, schools (public and private), utilities and government offices.
Source: SYNEVA Economics, Infogroup™ Government Division

Besides survivorship, new business formation, closure or relocation can also be tracked by examining individual business records. Unsurprisingly, businesses in the range of 1-4 employees comprised the majority of new records in the SWC. Of the 3,414 new businesses since 2010, 2,624 or 77 percent are in the 1-4 employment range (Figure XX).

Figure 21
SWC Business Dynamics 2010-2015
Businesses by Employment Range



Does not include churches, schools (public and private), utilities and government offices.
 Source: SYNEVA Economics, Infogroup™ Government Division

Examining new business formation, closure or relocation by industry sector reveals vast differences in business volatility and momentum (Table 15). Over the last five years two sectors stand out for their differing contributions. *Health Care* accounts for 17.4 percent of current business records, 11.2 percent of all records closed or moved, yet still contributed 22.7 percent of all new records. The activity indicates a surge of new business formation in the *Health Care* industry. On the other hand, *Retail Trade* accounts for 18.9 percent of current business records, 21.5 percent of all records closed or moved, and only 15.5 percent of all new records. The activity indicates a lower relative pace of new business formation in the *Retail Trade* industry.

Table 15
SWC Business Dynamics 2010-2015
Businesses by Industry

Industry	2015 Total		Closed or Moved		New	
	#	% Total	#	% Total	#	% Total
Accommodation & Food Services	812	9.7%	285	9.9%	251	7.4%
Administrative Services	306	3.6%	135	4.7%	135	4.0%
Agriculture, Forestry	50	0.6%	21	0.7%	18	0.5%
Arts, Entertainment & Recreation	199	2.4%	45	1.6%	78	2.3%
Construction	829	9.9%	402	14.0%	354	10.4%
Finance & Insurance	341	4.1%	89	3.1%	163	4.8%
Health Care	1,458	17.4%	320	11.2%	774	22.7%
Information	159	1.9%	53	1.8%	66	1.9%
Manufacturing	232	2.8%	111	3.9%	79	2.3%
Other Services	764	9.1%	247	8.6%	272	8.0%
Professional, Scientific, & Technical Services	701	8.3%	230	8.0%	309	9.1%
Real Estate	613	7.3%	195	6.8%	238	7.0%
Retail Trade	1,584	18.9%	617	21.5%	529	15.5%
Transportation & Warehousing	119	1.4%	37	1.3%	54	1.6%
Wholesale Trade	236	2.8%	77	2.7%	84	2.5%

Does not include churches, schools (public and private), utilities and government offices.

Source: SYNEVA Economics, Infogroup™ Government Division

Ideally, an analysis of business records should help uncover individual firms that are growing exceptionally fast. As noted earlier, the reported employment totals should be considered estimates, so tracking precise changes between years does not provide reliable results. However movement to higher employment ranges can provide an indication of superior growth. As the employment ranges do not represent equal sizes, movements to a higher range are also not necessarily equal. For example moving from the 1-4 range to the 5-9 range means an addition of 1 to 8 employees, while moving from the 20-49 range to the 50-99 range would mean an addition of 1 to 30 employees. In all, 199 businesses moved up an employment range between 2010 and 2015 (Table 16). No business moved up more than one range. The majority of the movement was from the 1-4 to 5-9 employment range; 118 businesses or 59 percent. The *Health Care* industry had the most movement, 40 businesses moved up an employment range.

Table 16
Number of SWC Businesses That Moved Up an Employment Range
2010-2015

Industry	Moved to New Employment Range				Total
	5 to 9	10 to 19	20 to 49	50 to 99	
Accommodation & Food Services	8	8	4		21
Administrative Services	5	1	2		8
Arts, Entertainment & Recreation	4	1		3	8
Construction	13	5	1		19
Finance and Insurance	6	3	1		10
Health Care	15	17	7	1	40
Information	7	3			10
Manufacturing	2	1			3
Other Services	21	5		1	27
Professional, Scientific & Technical Services	6	1		1	8
Real Estate	10	3		1	14
Retail Trade	17	4	3	1	25
Transportation & Warehousing		1			1
Wholesale Trade	4	2			6
Total	118	55	18	8	199

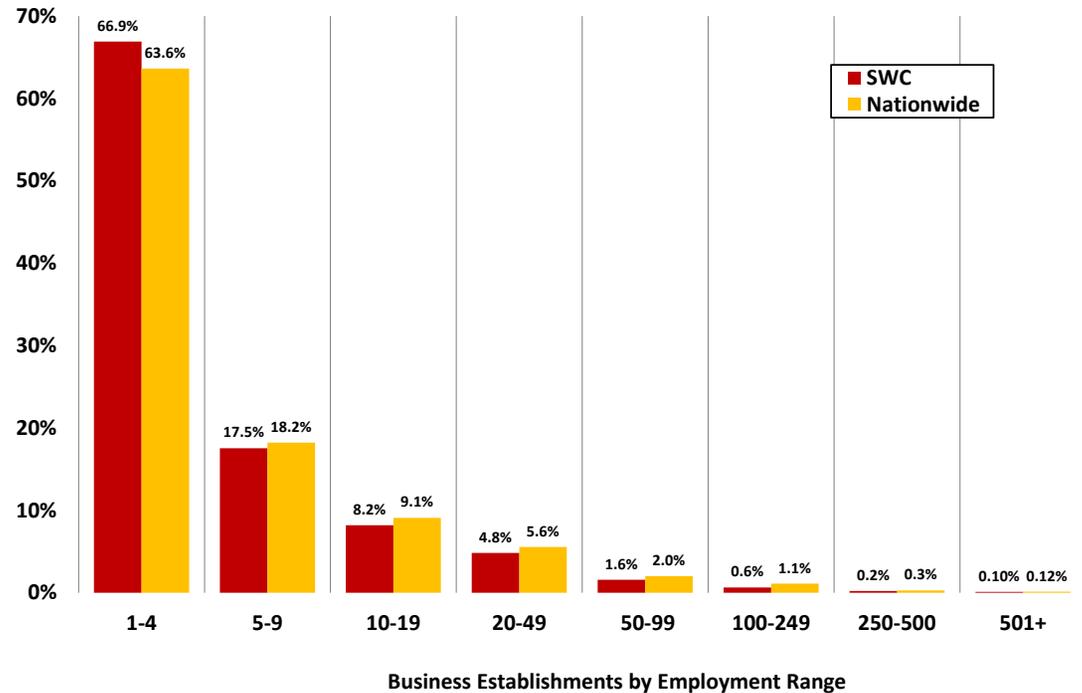
Does not include churches, schools (public and private), utilities and government offices.

Source: SYNEVA Economics, Infogroup™ Government Division

A comparison of individual business records between the SWC and nationwide reveals businesses in the 1-4 employment range comprise a greater proportion in the SWC (Figure 22). Although the difference is only 3.3 percentage points greater, it is the only range with a larger relative proportion.

Furthermore, when the comparison examines the proportion of total employment by business size, the SWC exhibits a higher relative proportion in all sizes below the 50-99 range (Figure 23). In the SWC 58.1 percent of employees work in businesses with less than fifty employees, while nationwide the number is 49.2 percent. The greatest disparity is observed in businesses with 500 or more employees; who employ 11.7 percent of the SWC workforce while nationwide the figure is 16.7 percent.

Figure 22
Business Establishments by Employment Range
Percent of Total Establishments- 2015



Does not include churches, schools (public and private), utilities and government offices.
 Source: SYNEVA Economics, Infogroup™ Government Division



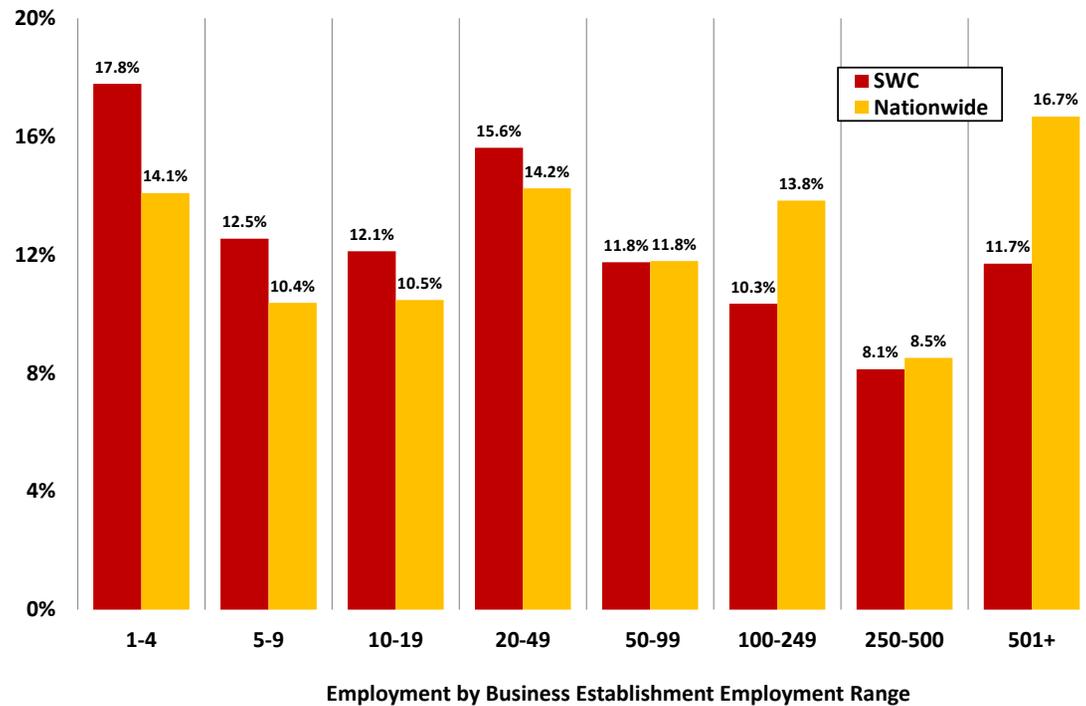
Other general findings in the analysis of individual business records:

Sixty-eight percent of business records identify the gender of the firm’s executive; in the SWC 65 percent are reported as male, the remainder female. This ratio did not change between 2010 and 2015.

In 2015, 435 businesses are reported as “home based.”

In 2015, 11 percent of businesses are reported as “branch locations” the remainder as “single locations.”

Figure 23
Employment by Business Establishment Size
Percent of Total Employment- 2015



Does not include churches, schools (public and private), utilities and government offices.

Source: SYNEVA Economics, Infogroup™ Government Division

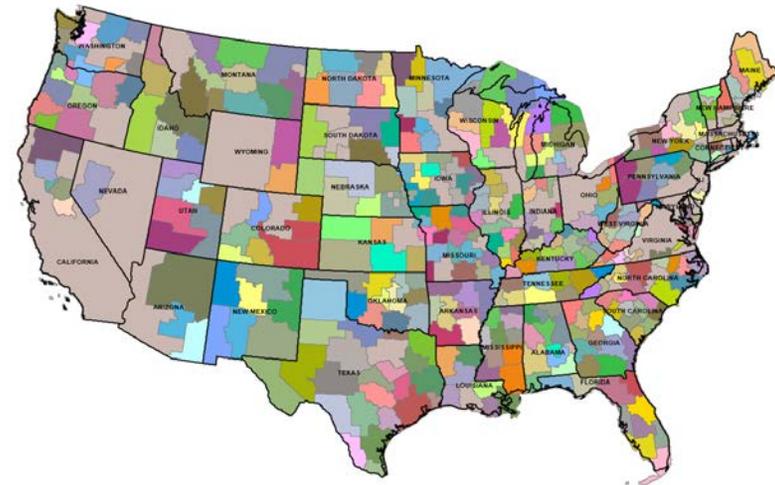
Examination of Similar Economic Development Districts

An examination of similar Economic Development Districts provides the SWC two main outcomes; a means for relative comparison on current trends and an identification of peer organizations for further contact and consultation on programing or management practices. Ideally the similar districts afford the SWC with a list of organizations which share comparable opportunities and challenges; yet who may have experienced different results on account of economic development efforts.

The Economic Development Administration lists 380 economic development districts in the nation (Figure 24). The districts are diverse multicounty areas ranging from 60,000 to 58 square miles in size, with employment totals at 2.9 million to slightly less than 3,000.

To select a group of districts similar to the SWC a statistical procedure was employed to analyze correlations and show the degree of similarities between key economic factors.¹⁴ The procedure plots districts graphically according to the correlation of key economic factors. From the results thirteen districts were selected which most closely matched the economic factors in the SWC (Figure 25, Table 17).

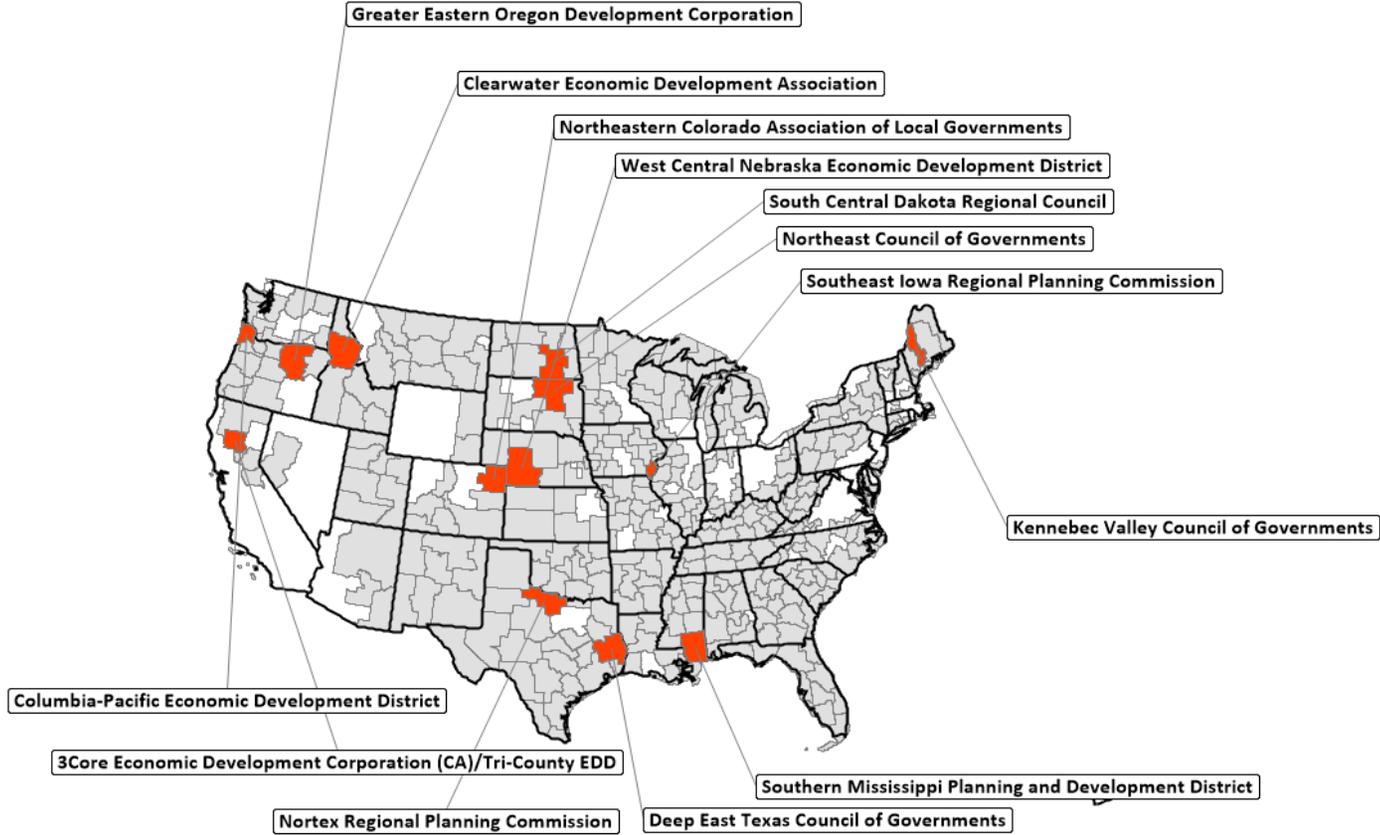
Figure 24
Economic Development Districts



Source: Economic Development Administration

¹⁴ *Principle Component Analysis* was conducted across all 380 districts using eight location factors; square miles, average wages, population per square mile, change in population density, percent of employment in Manufacturing, percent employment in Professional & Business Services, percent of employment in Government and private business establishment density.

Figure 25
Economic Development Districts Similar to SWC



Source: SYNEVA Economics, Economic Development Administration



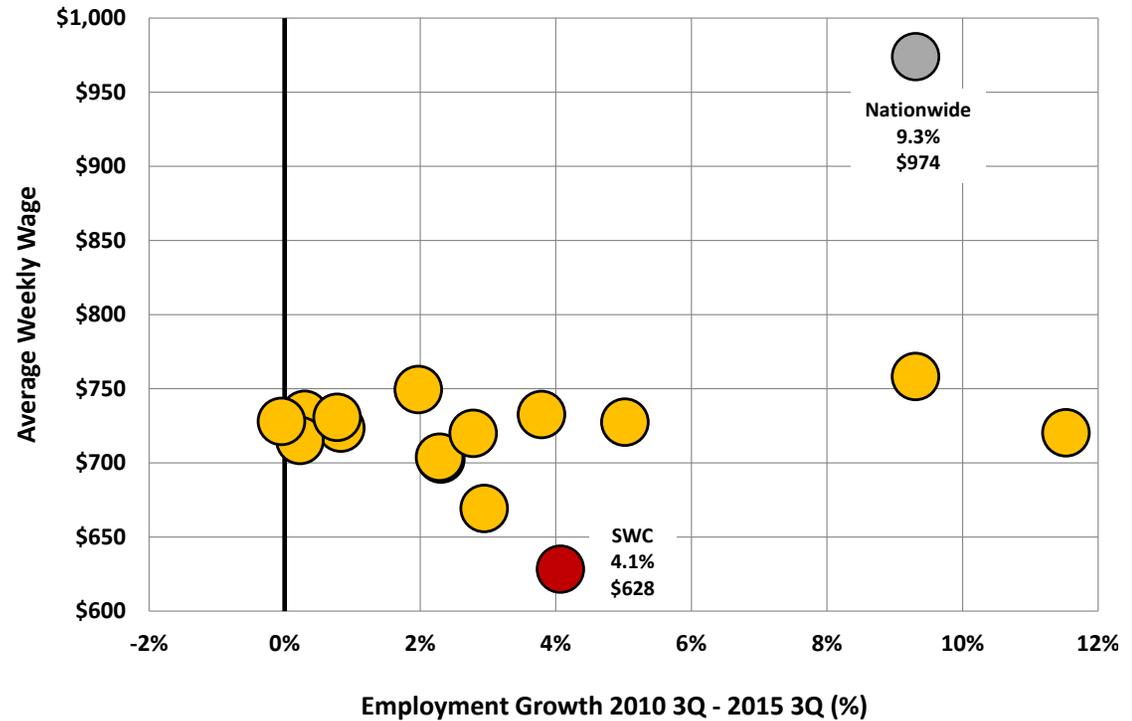
Table 17
Economic Development Districts Similar to SWC

Economic Development District	Counties (#)	Employment	State
3Core Economic Development Corporation/Tri-County EDD	3	106,455	CA
Clearwater Economic Development Association	5	43,277	ID
Columbia-Pacific Economic Development District	3	42,780	WA
Deep East Texas Council of Governments	12	108,026	TX
Greater Eastern Oregon Development Corporation	5	40,385	OR
Kennebec Valley Council of Governments	3	88,320	ME
Nortex Regional Planning Commission	11	80,705	TX
Northeast Council of Governments	12	42,826	SD
Northeastern Colorado Association of Local Governments	6	27,963	CO
South Central Dakota Regional Council	9	25,837	ND
Southeast Iowa Regional Planning Commission	4	53,272	IA
Southern Mississippi Planning and Development District	15	271,526	MS
West Central Nebraska Economic Development District	18	63,352	NE

Source: SYNEVA Economics, U.S. Bureau of Labor Statistics, Economic Development Administration

Figure 26
Average Weekly Wage & Five-Year Employment Growth
Similar Economic Development Districts

Relative to the other similar districts, the SWC had the lowest average weekly wage; about 13 percent below the average of the thirteen (Figure 26 and Table 18). At 4.1 percent, the SWC had the fourth highest rate of employment growth. Compared to a nationwide measure, all of the districts share a lower average weekly wage and only one exceeded the nationwide rate of employment growth.



Source: SYNEVA Economics, U.S. Bureau of Labor Statistics

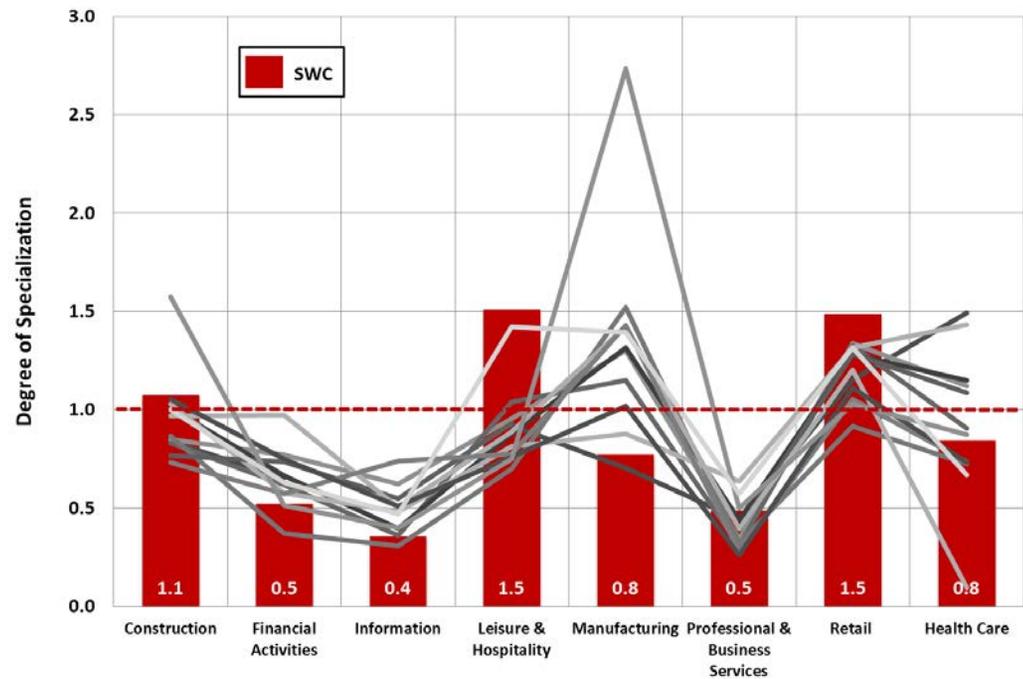
Table 18
Average Weekly Wage & Five-Year Employment Growth
Similar Economic Development Districts

Economic Development District	Average Weekly Wage	Employment Growth Rate 2010 3Q-2015 3Q
Southwestern Commission	\$633.2	4.1%
3Core Economic Development Corporation/Tri-County EDD	\$720.3	11.5%
Clearwater Economic Development Association	\$723.5	0.8%
Columbia-Pacific Resource Conservation and Economic Development District	\$732.8	0.3%
Deep East Texas Council of Governments	\$715.2	0.2%
Greater Eastern Oregon Development Corporation	\$732.7	3.8%
Kennebec Valley Council of Governments	\$749.5	2.0%
Nortex Regional Planning Commission	\$728.0	0.0%
Northeast Council of Governments	\$702.5	2.3%
Northeastern Colorado Association of Local Governments	\$727.5	5.0%
South Central Dakota Regional Council	\$703.9	2.3%
Southeast Iowa Regional Planning Commission	\$758.3	9.3%
Southern Mississippi Planning and Development District	\$730.8	0.8%
West Central Nebraska Economic Development District	\$669.3	2.9%
Nationwide	\$974.0	9.3%

Source: SYNEVA Economics, U.S. Bureau of Labor Statistics

A comparison of industry specialization among the similar districts shows the SWC with a higher degree of specialization in *Leisure & Hospitality* and *Retail* (Figure 27). Both industries have a measure of 1.5, meaning an industry concentration roughly 50 percent greater than nationwide. The SWC also has some of the lowest comparable measures of industry specialization in *Information* and *Manufacturing*. Eight districts have high specialization in *Manufacturing*, and although to a lower degree, eleven have high specialization in *Retail*.

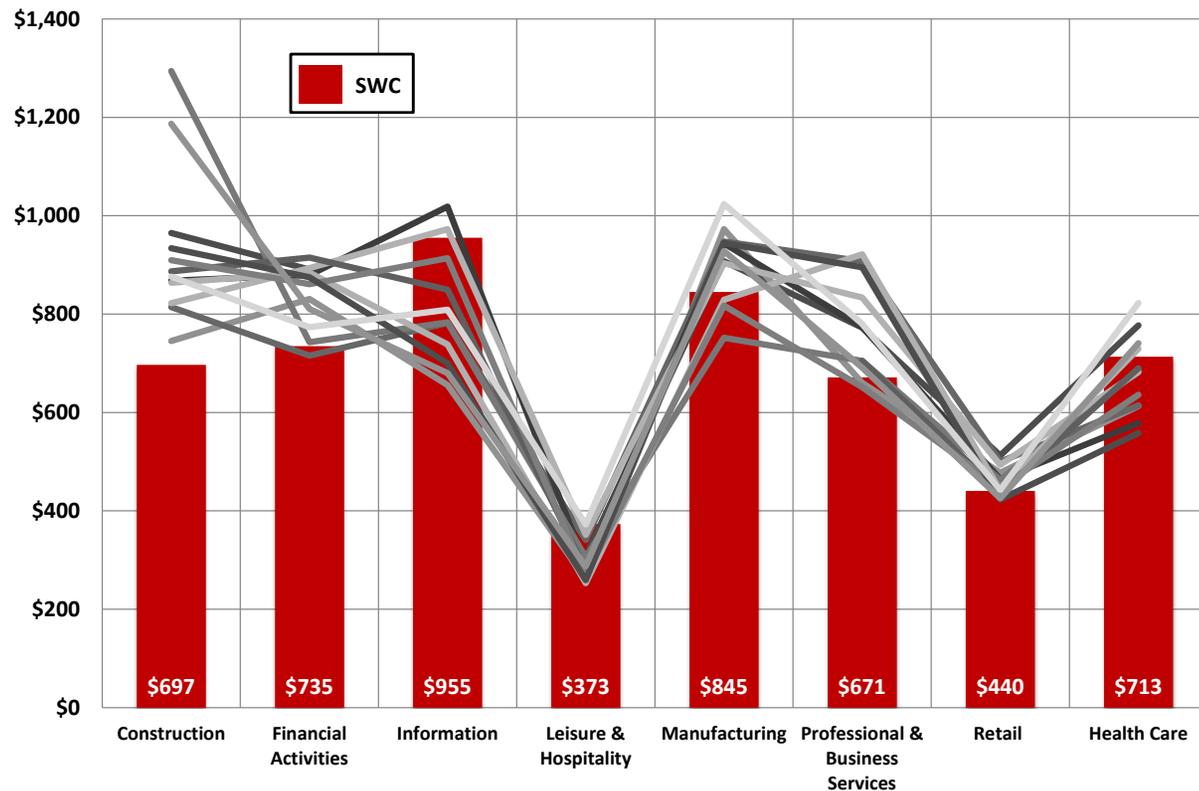
Figure 27
Degree of Industry Specialization
Similar Economic Development Districts*



*Lines track the degrees of industry specialization for each district, not shown the West Central Nebraska Economic Development District due to insufficient data.
 A measure of 1.0 equals the nationwide employment concentration of that industry.
 Sources: SYNEVA Economics, U.S. Bureau of Labor Statistics, 2015 3Q

A comparison of average industry weekly wages shows that the SWC has the lowest wages in *Construction* and the highest in *Leisure & Hospitality* compared to the similar districts (Figure 28 and Tables 19, 20). The SWC also has relatively lower wages in *Financial Activities* and *Retail*; but is comparable in *Information*, *Manufacturing* and *Health Care*.

Figure 28
Average Industry Weekly Wages
Similar Economic Development Districts*



*Lines track the average weekly wage by industry for each district, not shown the West Central Nebraska Economic Development District due to insufficient data.

Sources: SYNEVA Economics, U.S. Bureau of Labor Statistics, 2015 3Q

Table 19
Average Industry Weekly Wages
Similar Economic Development Districts

	Construction	Financial Activities	Information	Leisure & Hospitality
Southwestern Commission	\$696.73	\$734.73	\$955.28	\$373.33
3Core Economic Development Corporation)/Tri-County EDD	\$964.76	\$890.65	na	\$308.10
Clearwater Economic Development Association	\$745.42	\$830.75	\$655.81	\$261.27
Columbia-Pacific Resource Conservation and Economic Development District	\$814.24	\$715.57	\$782.10	\$340.90
Deep East Texas Council of Governments	\$867.95	\$879.49	\$1,018.26	\$288.63
Greater Eastern Oregon Development Corporation	\$1,294.12	\$742.77	\$783.35	\$305.30
Kennebec Valley Council of Governments	\$822.18	\$893.63	\$972.65	\$351.18
Nortex Regional Planning Commission	\$886.70	\$914.86	\$849.68	\$280.12
Northeast Council of Governments	\$863.55	\$884.55	\$738.31	\$252.97
Northeastern Colorado Association of Local Governments	\$909.72	\$860.91	\$913.76	\$268.90
South Central Dakota Regional Council	\$933.74	\$874.78	\$699.72	\$259.23
Southeast Iowa Regional Planning Commission	\$1,186.74	\$810.58	\$680.30	\$287.18
Southern Mississippi Planning and Development District	\$876.11	\$773.26	\$808.72	\$372.35

Sources: SYNEVA Economics, U.S. Bureau of Labor Statistics, 2015 3Q

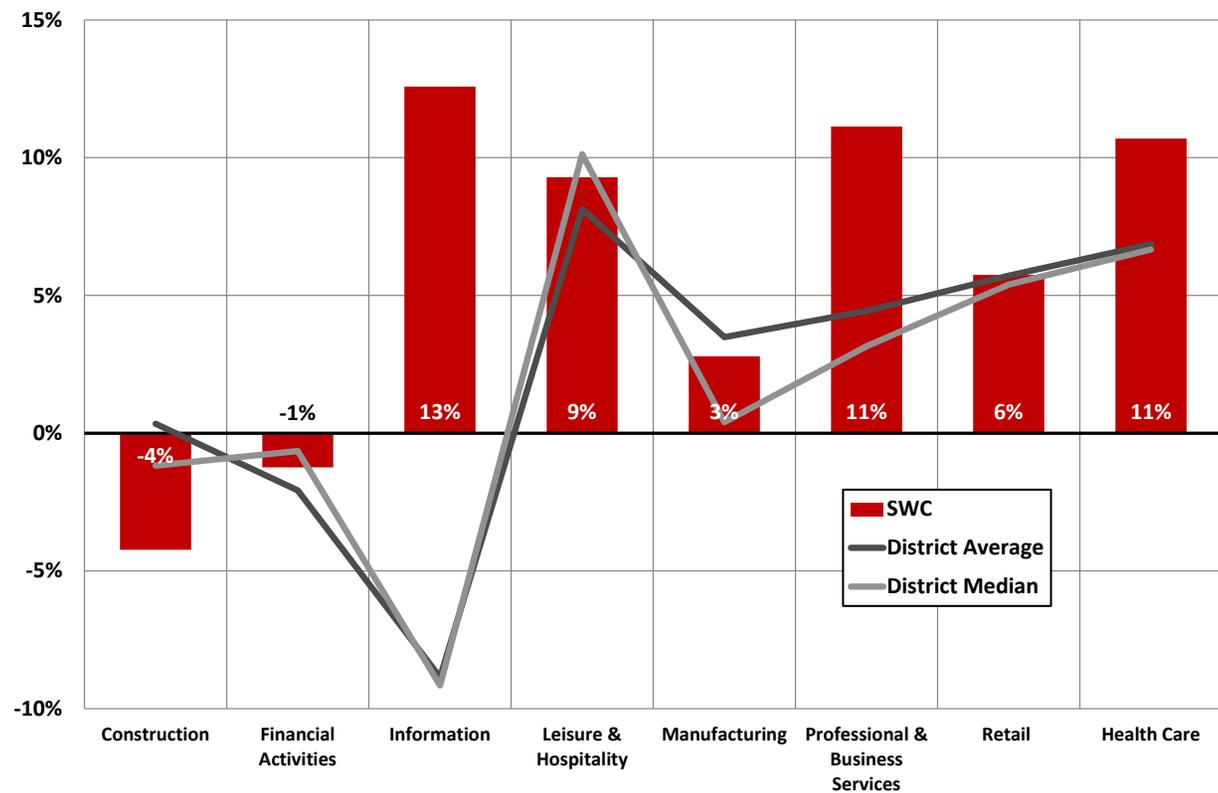
Table 20
Average Industry Weekly Wages
Similar Economic Development Districts

	Manufacturing	Professional & Business Services	Retail	Health Care
Southwestern Commission	\$844.83	\$671.35	\$440.48	\$713.45
3Core Economic Development Corporation)/Tri-County EDD	\$907.41	\$772.38	\$512.59	\$776.93
Clearwater Economic Development Association	\$972.54	\$660.16	\$477.39	\$613.18
Columbia-Pacific Resource Conservation and Economic Development District	\$947.63	\$907.51	\$499.83	\$614.67
Deep East Texas Council of Governments	\$943.98	\$773.16	\$464.81	\$578.17
Greater Eastern Oregon Development Corporation	\$751.93	\$704.87	\$463.01	\$685.43
Kennebec Valley Council of Governments	\$903.33	\$833.50	\$493.64	\$682.22
Nortex Regional Planning Commission	na	\$704.91	\$437.54	\$690.04
Northeast Council of Governments	\$829.09	\$921.63	\$441.75	\$729.55
Northeastern Colorado Association of Local Governments	\$817.06	\$651.48	\$447.91	\$635.98
South Central Dakota Regional Council	\$944.50	\$895.10	\$423.08	\$558.11
Southeast Iowa Regional Planning Commission	\$928.18	\$691.15	\$425.63	\$740.68
Southern Mississippi Planning and Development District	\$1,024.00	\$779.89	\$442.31	\$822.62

Sources: SYNEVA Economics, U.S. Bureau of Labor Statistics, 2015 3Q

Finally, a comparison of percent employment change over the last five years by industry sectors reveals that the SWC fared stronger in most sectors relative to the average or median of similar districts (Figure 29). However, the average and median results also mask the more volatile percentage swings experienced among some individual districts (Table 21 displays maximum and minimum results); implying that the SWC has likely experienced a more stable period of employment change over the last five years.

Figure 29
2010-2015 Percent Change Industry Employment
Similar Economic Development Districts



Sources: SYNEVA Economics, U.S. Bureau of Labor Statistics

Table 21
2010-2015 Percent Change Industry Employment
Similar Economic Development Districts

	Construction	Financial Activities	Information	Leisure & Hospitality
Southwestern Commission	-4.2%	-1.2%	12.6%	9.3%
District Average	0.3%	-2.1%	-8.9%	8.1%
District Median	-1.2%	-0.6%	-9.2%	10.1%
District Maximum	33.3%	11.2%	2.0%	19.5%
District Minimum	-20.2%	-23.9%	-17.5%	-1.5%

	Manufacturing	Professional & Business Services	Retail	Health Care
Southwestern Commission	2.8%	11.1%	5.7%	10.7%
District Average	3.5%	4.4%	5.7%	6.9%
District Median	0.4%	3.2%	5.4%	6.7%
District Maximum	26.1%	25.3%	11.9%	32.4%
District Minimum	-16.1%	-32.1%	-0.9%	-8.5%

Sources: SYNEVA Economics, U.S. Bureau of Labor Statistics, 2010 2Q-2015 3Q

In summary, the examination of similar economic development districts reveals several broad findings. The SWC has a lower *overall average weekly wage*, even when compared to statistically chosen similar districts. The SWC has higher relative employment concentration in two lower-paying industries; *Leisure & Hospitality* and *Retail*. Yet for most *individual industry sectors*, SWC's average weekly wage is fairly close or comparable to the similar districts, which doesn't fully explain the lower overall wage. Instead the findings imply that the overall lower wage in the SWC is partly due to the mix of industry employment (higher relative proportion working in lower paying industries).

While this examination does not take into account the many other factors underlying individual district economic performance (natural resources, history, workforce, etc.), it does demonstrate that there are few strict conventions which limit how much or how little an industry sector employs within the bounds of these similar districts. That is, there is evidence from this analysis that suggests that the SWC could comfortably expand industry employment in, for example *Manufacturing*, to levels which presently occur in other similar districts. The findings show that the common economic factors which define the uniqueness of the SWC and the similar districts (size, population density, etc.) allow the SWC the possibility of having much higher wage employment, as demonstrated by those same similar districts.

Optimal Industry Targets

Optimal industry targets represent a select group of industries which offer economic benefits and opportunities for attraction and expansion. The target selection is based on a number of screens designed to identify promising developments and suitability to the SWC economy.

The final optimal industry targets comprise 15 individual industry sectors which can be grouped under three broad categories; *advanced services*, *manufacturing opportunities* and *forest & wood products cluster support* (Table 23). A detailed description of each target is provided in Table 32. As economies and industries are dynamic and mostly unpredictable, the three groups are independent of each other and noncompetitive; allowing flexibility in adoption of economic development strategies.

Information detailing the screens and other pertinent data for the targets is presented in a set of three tables for each group. The information can be used to prioritize targets and support marketing efforts.

Table 22
SWC Optimal Industry Targets

Advanced Services	Manufacturing Opportunities	Forest & Wood Products Cluster Support
<ul style="list-style-type: none"> • Data Processing & Hosting • Architectural & Engineering Services • Computer Systems Design • Business Schools/Computer & Management Training • Medical & Diagnostic Laboratories • Commercial & Industrial Machinery Equipment Repair & Maintenance 	<ul style="list-style-type: none"> • Beverage Mfg. • Plastics Product Mfg. • Industrial Machinery Mfg. • Electrical Equipment & Component Mfg. 	<ul style="list-style-type: none"> • Sawmills & Wood Preservation • Wood Product Mfg. • Household, Institutional Furniture & Kitchen Cabinet Mfg. • Furniture & Home Furnishing Merchant Wholesalers • Lumber & Construction Materials Merchant Wholesalers

Current SWC Presence: Holding a presence in the SWC’s current economy is a primary screen. Firms currently operating in the targeted industry demonstrate a basic level of suitability and existence of a support framework (suppliers, customers, distributors, etc.). Selecting targets with no SWC presence is problematic, as there may be strong business rationales for their absence, which are not clearly apparent from an outside research standpoint. The table accounts the current employment, five-year employment change, average earnings and number of business establishments in the SWC. Average annual earnings greater than the SWC overall average of \$30,874 is also an important screen for targeting; particularly given the dominance of low wage employment.

SWC Integration: While adding new quality employment is the top-line outcome of successful industry targeting, the resulting impact on the local economy of the target is another significant criteria. The *Jobs Multiplier* is the number of total jobs supported in the SWC on account of one job; a multiplier of 1.8 means for every job another 0.8 jobs is supported due to the economic activity generated. The *Postsecondary Completions* information has two measures and reflects the importance of the SWC’s postsecondary institutions. *Percent Occupations Satisfied* is the percentage of the target’s total occupational demand met by specific program completions in the SWC.¹⁵ The measure quantifies the specific postsecondary occupational pipeline serving each target. The *# High Demand Occupations* records the number of critical occupations (comprising more than two percent of the industry’s total employment) that are satisfied from SWC postsecondary completions. *SWC Supply Chain Demand* lists the dollar value and percent of output for each target’s industrial sector that is being imported into the SWC to meet overall local demand. The data is important to prospects in that it quantifies potential local market demand and is important to economic development because it quantifies opportunities to increase local production and reduce imports.

Opportunity Measures: Lists five-year national employment projections, national same-industry earnings and the gap between local and national earnings. Projections provide the expected future trends for each target. For some industries the nation projections may be negative, although the industry may be consolidating or moving within the nation; still offering opportunities for attraction or expansion. Positive earnings gaps may signal potential labor cost savings for prospects or higher earnings potentials for SWC workers.

¹⁵ The methodology links completions to likely occupations and the staffing patterns for each target. Completions totally 3,928 were examined from Western Carolina University, Haywood Community College, Southwestern Community College and Tri-County Community College. For example WCU had 11 degree completions in *Computer Science* in 2014. The degree satisfies the requirements of a *Software Developer* and the occupation comprises 6.4 percent of occupations in *Data Processing & Hosting* industry. The results are biased to industries with higher levels of educational demand.

Advanced Services

Advanced Services represent a group of industries that are service suppliers, have high relative earnings and are projected to have solid growth. They generally fit into what is termed the *knowledge economy*; as demonstrated by the relatively high percent of occupations satisfied by SWC postsecondary completions. The majority of these services are being imported into the SWC; offering a measurable existing market potential to prospects. The SWC can offer unique quality-of-life amenities to firms wishing to attract and retain skilled workers. Many of these firms can provide their services online or remotely.

Data Processing & Hosting growth is driven by the trend towards more outsourcing of specialized services coupled with cost saving of shifting to online transactions. Industry concentration is low.

Architectural & Engineering Services growth is driven by post-recession increases in private investment, especially from nonresidential, commercial and infrastructural activity. Industry concentration is low and firms focused on differentiated services. The industry was identified as having a significant supply gap, with the SWC importing \$33 million of its services annually.

Computer Systems Design is primarily be driven by mainstream adoption of third-platform services, which encompasses cloud-based computing, big data analytics and mobile connectivity. The disparate service offerings prevent significant industry concentration. The industry was identified as having a significant supply gap, with the SWC importing \$31 million of its services annually.

Business Schools/Computer & Management Training is an unconventional target based on the high degree of SWC specialization in education (industry cluster and occupational), the area's strong appeal to visitors and the existing tourism infrastructure. Together with the proximity to larger metro areas, the SWC may offer an ideal location for specialized training or certification courses.

Medical & Diagnostic Laboratories growth is driven from healthcare reform and the resulting increase in the number of insured individuals and the aging US population (requiring more frequent monitoring and testing by healthcare providers).

Commercial & Industrial Machinery Equipment Repair & Maintenance is another unconventional target. Growth is driven by increased outsourcing of services due to the need for specialized knowledge to repair and maintain complex and costly machinery.

Increasingly support services are migrating online. The strong showing of SWC worker skills in *Equipment Maintenance, Equipment Selection* and *Repairing* provide solid rationales for industry attraction.

Table 23
Advanced Services
Current SWC Presence

Industry	2015 Employment	5-Year Change	Average Earnings	Business Establishments
Data Processing & Hosting	126	93	\$54,579	12
Architectural & Engineering Services	645	67	\$36,676	63
Computer Systems Design	849	58	\$37,666	52
Business Schools/Computer & Management Training	14	(9)	\$36,885	3
Medical & Diagnostic Laboratories	11	(11)	\$142,503	6
Commercial & Industrial Machinery Equipment Repair & Maintenance	71	14	\$36,033	14

Sources: SYNEVA Economics, EMSI

Table 24
Advanced Services
SWC Integration

Industry	Jobs Multiplier	Postsecondary Completions		SWC Supply Chain Demand	
		Percent Occupations Satisfied	# High Demand Occupations	Imported	Percent Total
Data Processing & Hosting	1.7	55.3	9	\$13,370,975	68.4%
Architectural & Engineering Services	1.2	43.6	4	\$32,567,837	78.3%
Computer Systems Design	1.3	71.1	8	\$31,170,944	82.8%
Business Schools/Computer & Management Training	1.1	48.8	4	\$515,853	56.2%
Medical & Diagnostic Laboratories	1.8	59.6	6	\$2,096,217	78.3%
Commercial & Industrial Machinery Equipment Repair & Maintenance	1.2	39.3	7	\$5,626,922	72.8%

Sources: SYNEVA Economics, EMSI, U.S. Bureau of Labor Statistics, National Center for Education Statistics

Table 25
Advanced Services
Opportunity Measures

Industry	5-Year National Projected Growth	National Average Earnings	National/SWC Earnings Gap
Data Processing & Hosting	3.3%	\$93,620	71.5%
Architectural & Engineering Services	7.5%	\$82,314	124.4%
Computer Systems Design	14.8%	\$100,410	166.6%
Business Schools/Computer & Management Training	3.7%	\$64,589	75.1%
Medical & Diagnostic Laboratories	11.8%	\$59,662	-58.1%
Commercial & Industrial Machinery Equipment Repair & Maintenance	6.6%	\$52,320	45.2%

Sources: SYNEVA Economics, EMSI

Manufacturing Opportunities

As noted earlier, even among similar economic development districts the SWC is underrepresented in *manufacturing*. Over the last five years the SWC has experienced growth, albeit small, in the manufacturing sector. Potential *manufacturing* employers would likely be interested in the 11,019 highly skilled workers in *Operation and Control* and the 6,961 workers with expertise in the *Mechanical* knowledge set. Additionally, the sector represents one of the largest supply gaps in the region. The industry is a traditional economic development target due to its portability of operations and high relative earnings. National projected growth trends can be deceiving due to consolidations and regional movements. Technological improvements to production, branding and product diversification is transforming many *manufacturing* industries and leading to increased opportunities for attraction and expansion.

Beverage Mfg. is the poster child of product diversification in manufacturing as exemplified by the growth of the craft brewing industry. Evolving consumer tastes and the demand for unique and *authentic* products are the main drivers. Industry concentration is rapidly lowering.

Plastics Product Mfg. was identified as one of the top supply chain gaps in the SWC (\$51 million imported) and the *Plastics & Chemicals* cluster was the only cluster to have high earnings, positive growth and a high degree of specialization. This target offers the opportunity to build upon an existing SWC strength. The industry is highly diverse and dynamic, with products ranging from pipes to packaging. Primary drivers include downstream markets and new product developments.

Industrial Machinery Mfg. is driven by downstream producers (wood products, plastics and semiconductors). Post-recession growth of downstream producers is strong and should stimulate demand with product innovation opening new markets. Industry concentration is low and dynamically lead by the adoption of new technologies.

Electrical Equipment & Component Mfg. driven in part by changes in consumer demand for products with increased energy efficiencies and lessened environmental impacts. Overall, global use of electric energy is expected to expand significantly, and the products used to distribute, store and utilize the energy should expand as well.

Table 26
Manufacturing Opportunities
Current SWC Presence

Industry	2015 Employment	5-Year Change	Average Earnings	Business Establishments
Beverage Mfg.	34	5	\$43,438	13
Plastics Product Mfg.	991	381	\$38,952	4
Industrial Machinery Mfg.	22	(9)	\$32,567	3
Electrical Equipment & Component Mfg.	116	(27)	\$39,027	4

Sources: SYNEVA Economics, EMSI

Table 27
Manufacturing Opportunities
SWC Integration

Industry	Jobs Multiplier	Postsecondary Completions		SWC Supply Chain Demand	
		Percent Occupations Satisfied	# High Demand Occupations	Imported	Percent Total
Beverage Mfg.	2.5	17.8	1	\$7,954,785	76.9%
Plastics Product Mfg.	1.7	33.7	4	\$51,198,486	96.0%
Industrial Machinery Mfg.	1.3	49.2	4	\$7,913,347	96.0%
Electrical Equipment & Component Mfg.	1.2	39.6	4	\$10,112,122	89.6%

Sources: SYNEVA Economics, EMSI, U.S. Bureau of Labor Statistics, National Center for Education Statistics

Table 28
Manufacturing Opportunities
Opportunity Measures

Industry	5-Year National Projected Growth	National Average Earnings	National/SWC Earnings Gap
Beverage Mfg.	3.7%	\$51,305	18.1%
Plastics Product Mfg.	-1.2%	\$48,393	24.2%
Industrial Machinery Mfg.	-0.3%	\$75,975	133.3%
Electrical Equipment & Component Mfg.	-1.4%	\$63,082	61.6%

Sources: SYNEVA Economics, EMSI

Forest & Wood Products Cluster Support

The *Forest & Wood Products Cluster Support* target is based largely on the cluster being the most specialized in the SWC economy. As such, it is highly unique and presents an opportunity to build upon existing specialization and expertise; which also limits outside competition and the ability of other areas to replicate. At present the cluster suffers from linkages to the housing market and aftermath of the recent downturn, which impacts both the five-year employment declines and the mostly negative national projections. Economic development efforts may focus on encouraging diversification and boosting the marketing of product authenticity. Product development could benefit from association with the characteristics used to attract visitors to the SWC (mountains, craftsmanship, quality, genuineness, locally sourced, etc.). Attraction of new firms can strengthen the cluster; increase the demand for existing skilled workers and spur innovation.

The individual industries targeted mark several places along the *Forest & Wood Products Cluster* supply chain; each with the ability to benefit both up and down stream SWC participants. By themselves each target may not demonstrate the promising attributes identified in the earlier targets, but as participants in the SWC's most specialized cluster they afford the potential for wider paybacks to the local economy.

Sawmills & Wood Preservation A key driver is the ability to alter goods and services produced in favor of market conditions. Typically, transportation costs limit the geographic scope of operations and the economies of scale needed for larger facilities.

Wood Product Manufacturing Existing product diversity prevents industry concentration; nationally 70 percent of operators are sole-proprietors. Drivers include development of niche products. The industry is labor intensive and heavily reliant on an experienced work force.

Household, Institutional Furniture & Kitchen Cabinet Mfg. Drivers include development of high-quality household furniture and the ability to customize. Concentration is low, nearly 70 percent employ fewer than 10 workers and only 5.9 percent employ more than 100.

Furniture & Home Furnishing Merchant Wholesalers and ***Lumber & Construction Materials Merchant Wholesalers*** Unsurprisingly, heavily reliant on access to manufacturers, a key driver is the favorability of products offered. Over 50 percent of total establishments are estimated to have fewer than five employees, while only 1.1 percent employing more than 100 workers.

Table 29
Forest & Wood Products Cluster Support
Current SWC Presence

Industry	2015 Employment	5-Year Change	Average Earnings	Business Establishments
Sawmills & Wood Preservation	135	(45)	\$36,995	10
Wood Product Manufacturing	260	(63)	\$30,605	8
Household, Institutional Furniture & Kitchen Cabinet Mfg.	194	(318)	\$44,950	13
Furniture & Home Furnishing Merchant Wholesalers	31	8	\$37,742	6
Lumber & Construction Materials Merchant Wholesalers	79	33	\$36,995	13

Sources: SYNEVA Economics, EMSI

Table 30
Forest & Wood Products Cluster Support
SWC Integration

Industry	Jobs Multiplier	Postsecondary Completions		SWC Supply Chain Demand	
		Percent Occupations Satisfied	# High Demand Occupations	Imported	Percent Total
Sawmills & Wood Preservation	1.6	14.4	1	\$19,422,758	52.9%
Wood Product Manufacturing	1.4	14.9	2	\$18,452,011	83.3%
Household, Institutional Furniture & Kitchen Cabinet Mfg.	1.2	16.3	1	\$6,128,128	95.5%
Furniture & Home Furnishing Merchant Wholesalers	1.1	22.9	3	\$7,685,344	97.3%
Lumber & Construction Materials Merchant Wholesalers	1.3	17.5	2	\$8,726,675	64.4%

Sources: SYNEVA Economics, EMSI, U.S. Bureau of Labor Statistics, National Center for Education Statistics

Table 31
Forest & Wood Products Cluster Support
Opportunity Measures

Industry	5-Year National Projected Growth	National Average Earnings	National/SWC Earnings Gap
Sawmills & Wood Preservation	1.1%	\$42,914	16.0%
Wood Product Manufacturing	-1.7%	\$37,392	22.2%
Household, Institutional Furniture & Kitchen Cabinet Mfg.	-7.2%	\$37,256	-17.1%
Furniture & Home Furnishing Merchant Wholesalers	-0.7%	\$59,414	57.4%
Lumber & Construction Materials Merchant Wholesalers	-3.3%	\$57,128	54.4%

Sources: SYNEVA Economics, EMSI

Table 32
Optimal Target Descriptions

NAICS	Industry Title
3211	Sawmills & Wood Preservation
	This industry comprises establishments primarily engaged in one or more of the following: (1) sawing dimension lumber, boards, beams, timber, poles, ties, shingles, shakes, siding, and wood chips from logs or bolts; (2) sawing round wood poles, pilings, and posts and treating them with preservatives; and (3) treating wood sawed, planed, or shaped in other establishments with creosote or other preservatives to prevent decay and to protect against fire and insects. Sawmills may plane the rough lumber that they make with a planing machine to achieve smoothness and uniformity of size.
3219	Wood Product Manufacturing
	This industry group comprises establishments primarily engaged in manufacturing wood products (except establishments operating sawmills and wood preservation facilities; and establishments manufacturing veneer, plywood, or engineered wood products).
3371	Household, Institutional Furniture & Kitchen Cabinet Mfg.
	This industry group comprises establishments manufacturing household-type furniture, such as living room, kitchen and bedroom furniture and institutional (i.e., public building) furniture, such as furniture for schools, theaters, and churches.
4232	Furniture & Home Furnishing Merchant Wholesalers
	This industry comprises establishments primarily engaged in the merchant wholesale distribution of furniture.
4233	Lumber & Construction Materials Merchant Wholesalers
	This industry comprises establishments primarily engaged in the merchant wholesale distribution of lumber; plywood; reconstituted wood fiber products; wood fencing; doors and windows and their frames (all materials); wood roofing and siding; and/or other wood or metal millwork.
3121	Beverage Mfg.
	This industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing soft drinks; (2) manufacturing ice; (3) purifying and bottling water and (4) brewing beer, ale, malt liquors, and nonalcoholic beer.
3261	Plastics Product Mfg.
	This industry group comprises establishments primarily engaged in processing new or spent (i.e., recycled) plastics resins into intermediate or final products, using such processes as compression molding; extrusion molding; injection molding; blow molding; and casting. Within most of these industries, the production process is such that a wide variety of products can be made.
3332	Industrial Machinery Mfg.
	This industry comprises establishments primarily engaged in manufacturing industrial machinery, such as food and beverage manufacturing machinery, semiconductor manufacturing machinery, sawmill and woodworking machinery (except handheld), machinery for making paper and paper products, printing and binding machinery and equipment, textile making machinery, and machinery for making plastics and rubber products.
3359	Electrical Equipment & Component Mfg.
	This industry group comprises establishments manufacturing electrical equipment and components.
5182	Data Processing & Hosting
	This industry comprises establishments primarily engaged in providing infrastructure for hosting or data processing services. These establishments may provide specialized hosting activities, such as web hosting, streaming services or application hosting; provide application service provisioning; or may provide general time-share mainframe facilities to clients. Data processing establishments provide complete

NAICS	Industry Title
	processing and specialized reports from data supplied by clients or provide automated data processing and data entry services.
5413	Architectural & Engineering Services
	This industry comprises establishments primarily engaged in planning and designing residential, institutional, leisure, commercial, and industrial buildings and structures by applying knowledge of design, construction procedures, zoning regulations, building codes, and building materials. This industry also comprises establishments primarily engaged in applying physical laws and principles of engineering in the design, development, and utilization of machines, materials, instruments, structures, processes, and systems. The assignments undertaken by these establishments may involve any of the following activities: provision of advice, preparation of feasibility studies, preparation of preliminary and final plans and designs, provision of technical services during the construction or installation phase, inspection and evaluation of engineering projects, and related services.
5415	Computer Systems Design
	This industry comprises establishments primarily engaged in providing expertise in the field of information technologies through one or more of the following activities: (1) writing, modifying, testing, and supporting software to meet the needs of a particular customer; (2) planning and designing computer systems that integrate computer hardware, software, and communication technologies; (3) on-site management and operation of clients' computer systems and/or data processing facilities; and (4) other professional and technical computer-related advice and services.
6114	Business Schools/Computer & Management Training
	This industry comprises establishments primarily engaged in offering an array of short duration courses and seminars for management and professional development. Training for career development may be provided directly to individuals or through employers' training programs; and courses may be customized or modified to meet the special needs of customers. Instruction may be provided in diverse settings, such as the establishment's or client's training facilities, educational institutions, the workplace, or the home, and through diverse means, such as correspondence, television, the Internet, or other electronic and distance-learning methods. The training provided by these establishments may include the use of simulators and simulation methods. This industry also comprises establishments primarily engaged in conducting computer training (except computer repair), such as computer programming, software packages, computerized business systems, computer electronics technology, computer operations, and local area network management. Instruction may be provided in diverse settings, such as the establishment's or client's training facilities, educational institutions, the workplace, or the home, and through diverse means, such as correspondence, television, the Internet, or other electronic and distance-learning methods. The training provided by these establishments may include the use of simulators and simulation methods.
6215	Medical & Diagnostic Laboratories
	This industry comprises establishments known as medical and diagnostic laboratories primarily engaged in providing analytic or diagnostic services, including body fluid analysis and diagnostic imaging, generally to the medical profession or to the patient on referral from a health practitioner.
8113	Commercial & Industrial Machinery Equipment Repair & Maintenance
	This industry comprises establishments primarily engaged in the repair and maintenance of commercial and industrial machinery and equipment. Establishments in this industry may repair agricultural and other heavy and industrial machinery and equipment (e.g., forklifts and other materials handling equipment, machine tools, commercial refrigeration equipment, construction equipment, and mining machinery).

Source: U.S. Census Bureau

Recommendations

- This analysis identified numerous opportunities from which to advance economic development activities. Some findings may best be used to simply augment existing efforts, while others might be used as a basis to lead or even create new programs.
- All findings are sourced and analytically sound. They should be readily incorporated into economic development decision making and outreach activities. Information by itself can provide a competitive advantage. For example, quantifying the number of highly proficient workers in a specific skill-set can provide a powerful message to a potential outside employer.
- Clearly, there is a need to focus on higher wage industry attraction and expansion. The fact that the SWC economy is growing at a healthy pace may mask the fact that the growth is coming from mostly lower wage industries and occupations. An important economic development role may be to educate community leaders and policy makers of the current situation and stress the need for action.
- The analysis identified fifteen optimal industry targets. These targets should provide a solid foundation from which to develop external attraction or internal development activities. As no single target met all criteria perfectly, it should be left up to local economic developers to finalize those targets that best match their community's amenities and needs.
- As all targets have some level of operations in the current SWC economy, recognizing the key players, understanding their needs and working to create specific development programs may offer superior returns. Internal development efforts may be beneficial for select high-wage industry clusters as well. In these cases the key role of economic developer may be to educate businesses of their shared roles, facilitate bringing them together and guide joint development efforts.

- A separate approach for entrepreneurs does not seem necessary in the context of the findings. As identified earlier, the SWC economy presently has a greater proportion of self-employed and small businesses. If using business size as a proxy for entrepreneurship, then the SWC presently supports a dynamic and considerable entrepreneurial community. The best return for economic development endeavors may be in directing or encouraging entrepreneurial activity in the targeted industries, or at least in higher wage industries. The *Forest & Wood Products Cluster Support* target is a good example, as business creation is as likely to come from local entrepreneurs as from outside firms. In simple terms then, rather than developing distinct programs for entrepreneurial development, a more beneficial approach would be to include entrepreneurs in efforts to develop higher wage employment.
- The identification of similar economic developments districts provides the basis for future peer-to-peer contact. Examination of programs and activities among similar districts may reveal new economic development opportunities for application in the SWC.

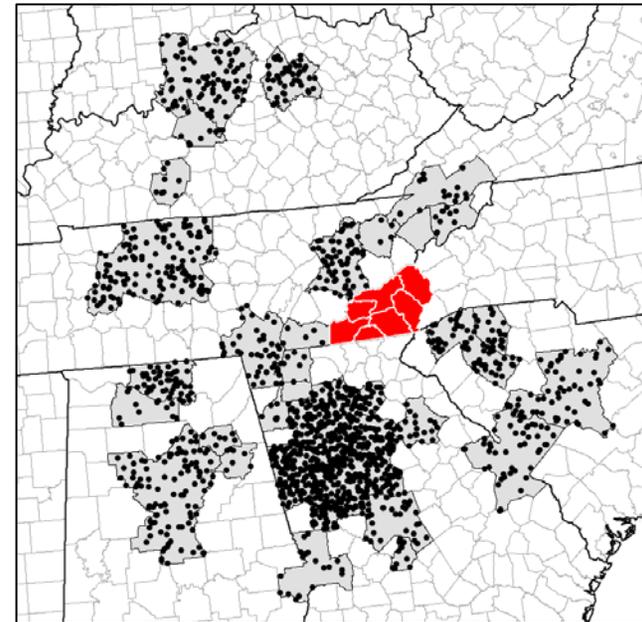
Addendum

Digital Files

Included in the analysis is a digital file of 7,894 executives in 28 metros within 250 miles of the SWC. The file includes contact information of the chief executive and details of the associated individual establishments.¹⁶ The firms each are classified as matching one of the NAICS codes listed in the above fifteen optimal industry targets. The selected firms each employ less than 500. Additionally each chief executive must have scored an interest in outdoor activities (such as boating, camping, fishing or hiking).

The digital file contains information which may be used to conduct preliminary marketing or first-round identification of potential industrial targets. The outdoor activity screen was used to help identify chief executive who may have an added attraction to the outdoor amenities offered by the SWC.

Figure 30
Location of Target Firms* on Digital File



* Each dot equals five firms.

¹⁶ Source is Infogroup's *ExecuReach* database which blends Infogroup's Business and Consumer Databases, allowing identification of "executives-as-consumers" making buying decisions at work or at home.

Firm Profiles

SYNEVA Economics is a private consultancy whose expertise is assisting public and private decision makers with local and regional economic analysis. SYNEVA Economic LLC's value is providing clear and insightful information to help clients make knowledgeable, efficient and effective decisions. Recent projects include economic impact analyses for major infrastructure projects, airports, industry relocations, and residential and commercial developments. The firm has conducted industry target and cluster evaluations for communities in 20 states. SYNEVA Economics has provided workforce assessments throughout the southeast, site selection evaluations for food manufacturers and distribution centers, plus conducted dozens of community assessments across the U.S.

For complete listing of projects and current activities visit www.syneva.com

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Chiple Consulting Founded in 2013, Chiple is a small, woman-owned firm that provides communities in North and South Carolina with a range of planning and communications services. The firm is located in Asheville, NC and manages public and stakeholder involvement, general plan development, and GIS efforts for a variety of projects that focus on community development. Chiple is grounded in the belief that public engagement should be tailored specifically to each community, using a mix of innovative and interactive elements based on the town's demographics and community characteristics.

Chiple recently led a national strategic planning effort for the USFS's National Air Program, which included a two-day workshop and follow-up report. She is also assisting in a strategic planning workshop and report for Hitchcock Woods in Aiken South Carolina. Chiple believes it is imperative to understand the local conditions of the region in order to develop a plan that is meaningful and useful to the client. Chiple is a DBE/WBE/SPSF certified firm in the States of North Carolina and Tennessee. www.chipleconsulting.com